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PROGNOSIS OF STERILITY *

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The treatment and more especially the operative treatment of sterility differs essentially from the treatment of ill health in that in the latter treatment is a matter of necessity, while in sterility it is frequently a matter of the patients' choice, of their readiness to submit to operation, or to perhaps tedious minor treatment, merely for the sake of future gain and happiness. For this reason an exact statement of the prognosis, of the degree to which success can be expected in the individual case, is of perhaps greater importance than in any other branch of surgery.

The importance of this point and the fact that the subject of sterility is so complex that a full review of even one phase of it can be with difficulty compressed within so short a space, is the reason that this paper must neglect treatment and even the details of diagnosis in order to cover prognosis even roughly.[1]

At first sight the most obvious method of dealing with this subject would be by the statistical study of cases treated, but apart from the complexity of the subject and the enormous number of cases which would be necessary for an adequate study of the several classes of sterility, a statistical presentation is rendered useless by the practical fact that so soon as one's study of sterility begins to bring him any considerable number of reference cases he sees an increasingly large proportion of cases which are on their face hopeless, the patients having traveled from place to place hoping against hope. The exclusion of these cases from his statistics would make them unconvincing and unreliable; their inclusion would make the results practically useless;[2] and further the only point which is of practical value is the attainment of an accurate prognosis in individual cases under the several classes of sterility, rather than a general statistical statement which would be of little value, and which, from the complexity of the subject, is all that could be obtained statistically from any number of actually observed cases which could today be collected.

In order to obtain a fair conception of the prognosis in any given case we must consider sterilities under a classification by causation, and must discuss, first, the prognosis in each of these classes by itself, and, later, the prognosis in the many cases in which the sterility is due to more than one of these causes.

We may begin such a classification by dividing sterilities into those which are dependent on absence or inferior quality of the ovum, those which are the result of secretions of the genital tract which are destructive to either the ovum or spermatozoa, and finally those which are due to absence or inferior quality of the spermatozoa. In each of these classes we have cases which are organic in nature, that is, due to local or anatomic abnormalities; and in each we see cases which are functional and due to abnormal constitutional conditions of the individual. We have, then, at least six classes to start from, and most of these must later be subdivided.

We are profoundly ignorant of the chemistry of the reproductive organs. We can then draw conclusions about the functional cases only from analogy with facts which have been more or less well established in the breeding of animals and by the very small amount of direct experimental work which has been done along lines bearing on sterility. After about three years of some personal study on this point in domestic fowls, and of inquiry among breeding farms devoted to animals it seems to be probably an established fact that, in animals, fertility is decreased both by undue obesity in either sex and by excessive overwork. There is also some reason to believe that conditions of life which produce marked nervous excitability decrease fertility in animals, and this must be remembered in connection with many of the conditions of civilized existence in the human race. We have, however, no knowledge of the mechanism by which such alterations of condition produce relative or complete sterility in animals. We do not even know whether it is effected by decreased quality of the ova

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1. The Causes and Treatment of Sterility in Women, Am. Jour. Med. Sc., August, 1907; Anteflexion of the Cervix and Spasm of the Uterine Ligaments in Relation to Retroversion, Dysmenorrhea and Sterility, Surg., Gynec. and Obst., July, 1911, p. 17; The Ultimate Results of the Conservative Surgery of the Ovaries, Surg., Gynec. and Obst., March, 1912, p. 255. Reynolds, Edward: The Theory and Practice of the Treatment of Sterility in Women, THE JOURNAL A. M. A., Jan. 11, 1913, p. 93; Further Points on the Sterility of Women, ibid., Oct. 11, 1913, p. 1363.

2. As an illustration: After selecting, in preparation for this paper, a certain date from which a statistical investigation of personal cases should begin, and assembling all the cases seen since that date, the first seven cases showed the following conditions: Patient 1, both tubes and one ovary previously removed for tuberculosis. Patient 2, large pelvic masses after repeated operations for "peritonitis"; condition of husband unknown. Patient 3, both tubes enlarged; two previous abdominal operations; will contemplate nothing but minor treatment. Patient 4, ten years of gonorrheal salpingitis in first marriage; two previous operations; demanded operation in spite of bad prognosis; both tubes found ruined. Patient 5, aged 44; previous operation for genital tuberculosis; polypus of cervix; husband not accessible. Patient 6, husband partly impotent and refuses examination. Patient 7, anteflexion of the cervix, pinhole os, plastic operation; pregnant three months afterward. Here six hopeless cases were found before one was favorable. In nearly a hundred cases which were abstracted before the attempt was given up, the proportion of hopeless cases proved indeed to be smaller than this, but was still so high as to vitiate statistical conclusions. The percentage of hopeless cases was, moreover, found to increase in a general relation to the distance from which the patient had been referred, thus hinting in another way that a prognosis drawn statistically from such a list as this would not show fairly the prognosis of sterility in cases as the practitioner sees them, or as they exist in the community at large.

or spermatozoa of the individuals, or by alteration of the chemical composition of the fluids in which these gonads are immersed.

We know even less about this question in the human race. We however know a little more about this point in the human male than in the female on account of the ease with which the spermatozoa can be directly inspected and because of the impossibility of finding the ovum. We have direct evidence that in the human male an excess of mental work sometimes results in the disappearance of spermatozoa from his semen, and some direct evidence that an excess of fat may produce the same result. We have also probable clinical evidence that the excessive use of alcohol and perhaps the extremely excessive use of tobacco decrease the vitality of his spermatozoa even though they be still present and of normal appearance. We have absolutely no evidence concerning the effect of these general conditions on the ovum, and can only surmise that they may well have the same effect on the gonads of the female that they have on those of the male. This weakness of our knowledge of the functional conditions is necessarily a constant embarrassment in our interpretation of the importance of the organic or anatomic abnormalities which we detect in a given case.

In spite of this extremely unsatisfactory state of our scientific knowledge it is, however, possible to obtain very satisfactory practical results in the prognosis of individual cases by the assumption of the following working hypotheses:

1. When the spermatozoa are abundant in number, normal in form and appearance, furnished with long cilia and capable of rapid movement through the semen the male is satisfactorily fertile.

2. When normal spermatozoa are killed or lose vitality overrapidly in the secretions of the individual woman, the chemicophysiologic character of her secretions furnishes an effective cause of sterility.

3. The alterations in a secretion which make it fatal to the spermatozoon may be localized in the vagina, in the cervix, in the body of the uterus, or in one or both tubes; and any one of these alterations may exist with normal secretions above it; but an alteration in the secreting surface in any of these localities usually vitiates all the secretions below it, probably by their necessary admixture.

4. When the spermatozoa are observed to penetrate without apparent loss of vitality to the fundus of the uterus and to survive there for a normal length of time, deficient quality of the ova may be considered the probable cause of the sterility.

Throughout the management of every case of sterility it must be remembered that the failure is the failure not of one individual, but of a couple, and that the condition of both partners must be studied.

If these hypotheses are borne steadily in mind throughout the study of a case, and if the variations in the conditions which affect them are studied and restudied by all the methods which are now at our disposal, it becomes surprising to see how practically good a prognosis can usually be made in spite of our lack of exact physiology and chemistry, but, on the other hand, it is certainly true that so long as we labor under these defects of theoretic knowledge, a painstaking exactness in the observation of details will be the first prerequisite to success.

In the practical management of such a case the first step is the taking of a careful history, which should not be confined to the history of the sterility alone, but should follow every detail of the past health of both patients, since many sterilities are dependent on slight pathologic alterations in the genitals on which great light is often thrown by past symptomatology. The history and physical examination should also include a careful study of the general condition and especially of the nutrition and habits of life of both partners, such factors as obesity, emaciation, nervous debility, drug habits, sleeplessness from overwork, etc., in either partner, being all important. Furthermore, distasteful as the subject is, he who is to handle sterility successfully must acquire the art of obtaining full and accurately truthful histories of the sexual habits of the couple, with especial reference to any abnormalities, even if apparently minor, in either the sexual appetite, or the methods employed in the performance of coitus. There is certainly a steady percentage of cases in which these matters are all important. The next step in the management of the case from a practical standpoint is usually a careful examination of the genital tract of the woman step by step, remembering that minor abnormalities which are unimportant to health, that is, which create no symptoms of importance, are often abundantly competent to produce infertility. I constantly see cases which have been pronounced normal even by excellent gynecologists and in which the organs are normal from the standpoint of health, but in which there is nevertheless some minor abnormality which is perfectly evidently the cause of the sterility, as is often shown by the fact that when this is remedied impregnation occurs without further treatment. This examination must include study of the condition of the vagina, cervix, uterus (including the character of their secretions), tubes and ovaries, and it must be remembered that the detection of the minor abnormalities of the tubes and ovaries almost always requires an examination under anesthesia.

When all this has been gone through with sufficient care the surgeon should be in a position to estimate with considerable closeness both the anatomic and functional condition of the woman and should have an equally good estimate of the general functional condition of her husband.

In the majority of cases the next step should be a form of examination which has been lately given to the profession by the ingenuity of Dr. Max Huhner of New York, the microscopic examination of the spermatozoa in situ in the genitals of the woman, of which much will be said in the remainder of this paper, but dramatic and interesting as this test is, it must always be remembered that it can furnish at most only one element in our study of a case.

This test not only furnishes an examination of the man which is in most cases thoroughly satisfactory, but also enables us to check the conclusions previously arrived at as to the relative importance of anatomic and functional conditions by direct observation of much of the process of fertilization while actually in progress. Experience has, however, convinced me that this process of observation must, like so many other exact methods, be considered by the wise clinician as furnishing only one link in the chain of evidence. It is so interesting and dramatic that it is extremely easy to overestimate its value, and to be led by it to false

conclusions, if we fail to consider its results in connection with those obtained by other methods of observation. If the conclusions arrived at by both methods are substantially in agreement, even to details, we may safely trust them. If the two methods yield different results we should distrust our conclusions, for, we are then certainly not in a position to act until further study has reconciled their discrepancies. To pin our faith to either method will usually lead to false conclusions.

For the performance of the Huhner test we must ask to see the woman as soon as possible after coitus has taken place. She may come to the office for this examination, since it is only very exceptionally, if ever, that the vagina does not contain sufficient spermatozoa for this test even after she has walked about for some time. With a normal vaginal secretion the spermatozoa should show active motility in the vagina for about an hour and sometimes much longer, but if circumstances permit it is desirable that the patient should be seen within half an hour of coitus. A specimen of the vaginal mucus is taken by a sterile platinum wire from the culdesac, exposed by a speculum, and this examination may be repeated if desired, whenever convenience permits, until the spermatozoa are found to have lost their activity. A specimen of the cervical mucus is next obtained in the same way, after the surface of the cervix has first been carefully wiped clean of semen by the repeated use of cotton swabs (no antiseptic should be used). With a normal cervical secretion and a normal os a few spermatozoa will usually be found in the lower part of the cervical cavity almost immediately after coitus, but will appear there in larger numbers at the end of half an hour to an hour. They are never so numerous here as in the vagina, but under normal circumstances, at the end of an hour, there should be several actively moving spermatozoa in each slide from the cervical mucus. The greatest care should be used to avoid the infliction of any trauma in the examination of the cervical cavity, since overthoroughness here may readily vitiate the use of the remaining portion of the test at that sitting.

When the cervical cavity has not been unduly disturbed, when the spermatozoa are of full vitality, and when the secretions of the woman are normal throughout, an examination of the secretions of the cavity of the uterine body should disclose the presence of a few actively motile spermatozoa in the uterine mucus at the end of from two to three or four hours. This examination must however be made with a specially devised syringe, since the platinum loop can neither be introduced with certainty to the fundus nor made to retain the uterine mucus during its withdrawal from the cervix. Even with the use of a syringe it is difficult to be absolutely sure that spermatozoa which are observed in the fluid withdrawn from the uterus are not due to an admixture from the cervix, but if the piston is not withdrawn until the tip of the syringe is well up in the uterine cavity, if the outside of the syringe is carefully wiped after withdrawal, if it is properly designed, and especially if the spermatozoa are found several times in succession, their probable location in the uterine mucus can be predicated. In some cases it will be found that actively motile spermatozoa have disappeared from the cervix after the lapse of a number of hours but are still found in the uterine mucus. In these cases the test is practically complete.

This study of the process of fertilization while it is actually in progress seems most rational and is in many cases extremely satisfactory, though care must always be used in its interpretation, as will be developed further later. The results obtained from it have led me to be a believer in the probable existence of that much mooted phenomenon, relative fertility; that is, I can now believe that a woman with slightly altered secretions may be sterile to a man with only moderately vitalized spermatozoa, and yet fertile to a man whose abundant and highly vital spermatozoa can resist her slightly hostile secretions; while, on the other hand, the moderately vital spermatozoa of the first man might succeed in effecting conjugation with the ovum through the absolutely normal secretions of another woman. On this latter point I have had fairly direct evidence, that is, I have seen instances in which with improvement in the secretions of the woman comparatively poor spermatozoa became able to make effective progress.

The Huhner test, valuable as it is, must however not be relied on too far lest it lead us into a too mechanical view of the problem of sterility. It requires for its successful use considerable tactile skill and no inconsiderable familiarity with the microscopic appearances to be noted, and there is undoubtedly much yet to be learned, from the microscopic point of view, by wider experience in the use of this test. It is not adapted for experimental, empiric use by the general practitioner, nor is it safe unless carried out with the most complete asepsis.

The several observations which may be made by this method will now be summarized, and their bearing on the results of other methods of examination will then be discussed.

If the vaginal pool when submitted to the microscope contains no spermatozoa, alive or dead, the probability is strong that the man is aspermatic and this should then be confirmed by direct examination of the semen as obtained by expression or from a condom specimen. Such aspermia may be merely temporary and is frequently neither permanent nor hopeless; but into the prognosis and treatment of aspermia and azoospermia I do not here propose to enter. If the vaginal pool contains an abundance of spermatozoa which are either dead, or at best feebly motile, at the time of a reasonably prompt examination, the character of the vaginal secretion is probably responsible for their death, and should in most cases be altered by treatment; but the importance of the vaginal condition is much affected by the size and position of the os uteri. There are not a few cases of widely opened os, with normal cervical secretions, in which a reasonable number of living spermatozoa succeed in entering the cervix in spite of a hostile vaginal secretion, that is, before it takes effect on them. If they succeed in entering the cervix in sufficient numbers and with sufficient vitality to be found later in the uterine mucus the condition of the vaginal secretion is of course of but little importance. If, however, as is frequently the case, spermatozoa are found, in an apparently normal cervical secretion, either dead or in a condition of limited vitality while the majority of their brethren have been killed by a hostile vaginal secretion, it becomes probable that even the most successful ones were largely devitalized by the latter, and its treatment is of the utmost importance.

Much the same thing may be said of the hostile conditions of the cervical secretion; but it may be remarked, in passing, that it is extremely interesting

to see how often actively motile spermatozoa may be seen to progress across the field of the microscope in a cervical secretion of grossly normal appearance, until they come in contact with some clump of pus cells which is evidently tied together by sticky secretion, with which the tail of the spermatozoon becomes entangled. The result then is that he indulges in futile struggles to escape, by the violence of which he may be seen to become exhausted, and in a few minutes gives up the struggle and lies still. This is of course due to the admixture with normal serum of thick inspissated mucus from inflamed cervical glands. In these cases the cervical mucous membrane must of course be rendered normal before impregnation is likely to occur. It may here be again remarked that this is unlikely to be effected to the degree of normality which permits of impregnation, without an intelligent alteration of the size and shape of the os and cervical cavity by a plastic operation, in addition to a curettage and thorough if not repeated disinfections of the mucous membrane.

These conditions as actually seen under the microscope, then, amply demonstrate the reason for the almost invariable failure, in sterility cases, of the mere dilatation and curettage in which the general practitioner so often indulges, not infrequently, too, with results which permanently decrease his patient's chance of fertility under any treatment. At least such has been the result of my observations in this class of cases.

If the uterine mucus contains spermatozoa which have penetrated there and then died prematurely (they should live many hours if not days in this situation), it becomes probable that they have been killed by exposure to the tubal secretions so soon as they have reached the point where those secretions are but little if at all diluted by the secretion of the uterus, and those of the lower portions of the tract through which the spermatozoa have lived. If the uterine cavity contains fairly numerous spermatozoa of high and persistent vitality in a woman who nevertheless remains persistently sterile, the demonstration that her sterility is ovarian is sufficiently satisfactory to be practically useful.

By this means of direct observation of the progress of the spermatozoa through the genital canal, of their comparative vitality at the start and in each stage of their progress, an experienced observer may obtain information of the utmost value. In his interpretation of these facts, however, he must be guided not merely by these results, but by their correspondence with the observed local conditions both gross and microscopic, and by these as checked by his remembrance of all the light gained from the history, and from his study of the general condition of both partners. Otherwise I believe that he will take an unduly narrow view and will be in the long run none too successful in his management of these cases.

Success in diagnosis and prognosis from such complicated observations as these must always be a matter of the personal equation, but with sufficient care and thorough study they become increasingly accurate and often surprisingly so.

The prognosis in individual cases may now be discussed in accordance with the classifications by causations originally proposed.

If the male is azoospermatic the prognosis is that of azoospermatism, which varies with its cause.

If his spermatozoa are either few, abundant but somewhat lacking in motility, or in any other way imperfect, the prognosis which would be derived from the condition of the woman is impaired by just the amount of the feebleness of the male, and though it is usually not hopeless, both elements must be remembered in forming it.

If the spermatozoa are not only abundant but also long tailed, well formed, and active, the prognosis can be made from the condition of the wife alone.

When, in such cases, the only abnormality found is in the character of the vaginal secretion, or in such alteration in combination with a pinhole-sized and badly placed os, the prognosis of fertility under appropriate treatment is that of almost certain success. When, with first class spermatozoa, the abnormality is found in the cervix with an apparently normal uterine body, tubes and ovaries, the prognosis after appropriate treatment is always very good. When, with first-rate spermatozoa, the abnormality is apparently to be found in the uterine body, that is, when the uterine secretion as obtained by the syringe is sticky, or unduly filled with clumps of leukocytes; when the ordinary symptoms of endometritis are present; when the bimanual examination shows the uterus large and soft; but, on the other hand, when a careful bimanual examination under anesthesia satisfies the attendant that there is every probability that the ovaries and tubes are normal, the prognosis under treatment is good. When the abnormality is believed to be slight but existent in both tubes, that is, when both tubes are palpable though not greatly enlarged, the prognosis, though not necessarily hopeless, is not good. When both tubes are grossly diseased the prognosis is, in my opinion, so poor that operation is not justified for sterility alone unless both partners insist on it after full statement of the poor prognosis. When coincidence of all the above methods of examination leads the observer to believe that though one tube is undoubtedly or probably abnormal there is reason to believe that the other tube is normal, the prognosis is again good, after the removal of the affected tube. I have had several most satisfactory successes in such cases, though we must, of course, be always prepared in these cases to find that the second tube is occluded in spite of our belief to the contrary. When the whole genital canal is normal or substantially normal as shown by the result of an inspection and examination under anesthesia, with the support of the presence of active spermatozoa at the fundus, that is, when the fertility is demonstrably merely ovarian, when arrest of development is not present, but the ovaries are either normal or slightly enlarged, the prognosis after conservative operation on the ovaries is thoroughly good. In my opinion such an operation is justifiable under the conditions of today for sterility alone, provided that all the pros and cons have been placed before both parties and that both of them request operation after due consideration of them.

In the far more common cases in which there is an admixture of several of these abnormalities the prognosis must be determined for the individual case by carefully weighing the principles set forth above as applied to the individual combination of circumstances.

The results obtained in the treatment of sterility have long been, and too often are still, proverbially poor. I believe that the reason is to be found in the fact that so many physicians treat these cases from a

purely empiric point of view and without any attempt at educating themselves in the special subject of sterility.

In the first place, the importance of an examination of both partners is too frequently overlooked; in the second place the search is too often directed to the discovery of lesions which should create ill health rather than toward the often minor conditions which determine sterility. To judge from my own experience, sterility is about as frequently the fault of the male as of the female, but popular opinion usually places the responsibility for the sterility on the woman, and this popular superstition is too often shared by the profession. I regret to say that my daily experience teaches me that many gynecologists do not hesitate to treat women and even subject them to operations, for sterility alone, with no knowledge whatsoever of the condition of their husbands. I feel bound to confess that in earlier days I have done it myself.

On the other hand, while urologists constantly rail at this weakness of the gynecologic portion of the profession, study of their writings inevitably leads one to the conclusion that too many of them have not plucked the beam from their own eyes. I have seen too many cases in which expert urologists have based their opinion on the sterility of a couple on an examination of the man alone to doubt that this branch of the profession is also often at fault. If the examination of a man shows him to be aspermatic no examination of the wife is necessary until his case has been concluded, but if, as so often happens, spermatozoa are present but are of doubtful excellence, the prognosis of the case must depend on the results of the examination of both partners. In this class of cases the examination of the spermatozoa as taken from the female genitals is of especial value, since it makes it possible to check at one sitting both the urologic and the gynecologic examinations, and to estimate their relative importance.

Nothing is more common than to have a woman referred from a distance unaccompanied by her husband, who is, however, stated by their attendant to be "all right"; and then to find that the statement that the husband is normal means merely that he is in general good health and potent, and does not mean that his spermatozoa have been seen. The treatment and more especially the operative treatment of a woman for sterility alone without actual inspection of her husband's spermatozoa is entirely unjustified. It is certainly practically expedient, and probably justifiable, to treat for sterility, even in an operative way, women who have been referred from a distance unaccompanied by their husbands, who present sufficient causes for sterility in their own person, and who bring an authoritative statement that the husband's spermatozoa have been examined and found normal, but the advantages to be gained by the inspection of the spermatozoa in their progress through the woman's genital tract, though not in my opinion essential, are nevertheless so considerable that sterility patients should, whenever possible, come to the specialist accompanied by their husbands.[3]

The case against the profession goes further than this common failure to study the couple as a pair, however. It may almost be said that the usual course of the gynecologist confronted by a case of sterility is to treat it from the standpoint of health and not from that of the relief of sterility, that is, to institute treatment or perform operations, directed to the removal of anatomic or other alterations which he perceives in a woman's genitals, without stopping to consider whether these observed peculiarities have anything to do with her individual sterility or not. It may almost be said that when the average gynecologist fails to detect any cause for sterility he dilates and curets the woman for the sake of doing something. There are of course many men whose conduct of such cases is conscientious and able, but the above description is, I believe, not too strong a statement of average facts, and has in my experience, in part at least, been applicable to the practice of some men who in other departments of gynecology are of recognized preeminence. Such empiric treatment is worse than useless. It too often renders futile, future rational efforts for the relief of the conditions which are actually important in the given case.

I believe it is mainly by reason of these two faults on the part of the profession that the treatment of sterility is so frequently unsuccessful. I believe that when sterilities are, as a habit, managed by the examamination of both partners as soon as sterility has become probable and before the woman has been subjected to useless and usually harmful minor treatment and operations, its prognosis will become what it ought to be and what it today is in well-managed cases, usually satisfactory.

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3. A satisfactory examination of a couple for sterility cannot always be concluded in a single office visit. It may not infrequently require a number of visits, sometimes at intervals of several days.

ABSTRACT OF DISCUSSION

DR. JOHN O. POLAK, Brooklyn: I wish to emphasize one point in connection with what Dr. Reynolds has said in regard to the fertility of the man. This point should be taken into consideration in every case; i. e., the male's past performances. I always have the man examined not only as to his potency, but as to the presence of evidences of previous infection, because that link—the history of previous infection—has a great influence on his potency.

DR. JOSEPH B. DELEE, Chicago: My associate, Dr. Lespinasse, has been working on cases which I have referred to him, to see if we could not reach a solution of the difficulty presented by those cases in which the husband is well and the wife is well and yet sterility exists. He has worked in the light of the knowledge given us by recent studies in serology. We all know of certain instances in which the husband, after a divorce from the sterile wife, has secured children from another woman, and the wife, on remarriage, has also been fertile by another man. I, personally, have such a case under my present care, having delivered the woman twice after a second marriage, and a physician in Los Angeles having delivered the second wife of this woman's former husband.

Why did not the spermatozoa of the first husband succeed in fertilizing the ovum of the first wife? Lespinasse has found the secretions in different women dissolved the spermatozoa of different men—a sort of immunity reaction. Experiments are being made, but I am not yet able to give the results, since we want to accumulate a sufficiently large number.

When Dr. Reynolds mentioned the change in the local secretions, this is but a step further in the study of the gross symptomatology and pathology of the genital tract. We have got far enough in the study of these immunity reactions that it seems possible we may find the cause of sterility where the husband presents no evidence of disease, has strong, living spermatozoa, and where the wife has no pelvic inflammation or no real surgical pathology of the parts.

The treatment of sterility has been, in a manner, extremely routine, and therefore, unsatisfactory, and women are

handled about from one specialist to another until they lose faith in medical art.

Another point that will explain some of the causes of sterility is the abnormality of the internal secretions. I hesitate to make that statement because it throws us into an immense field that is very dimly lighted by positive knowledge, but I do know cases that have been unsuccessfully treated elsewhere and have been successfully treated by the glands of internal secretion—thyroid and other extracts. In some instances administration of these preparations has been followed by impregnation, especially that type of firm fat obesity, in which the women are round and plump and the fat is hard, almost like firm flesh, and the periods are inclined to be irregular and small in amount. Those cases have responded to combined treatment occasionally.

The use of alkaline douches just before intercourse deserves mention. The husband, as a cause of the sterility, must be always emphasized, and I have found that excessive smoking of tobacco is occasionally a cause of sterility, and that alcohol, even when the spermatozoa are alive and motile, indirectly prevents them from successfully fertilizing an ovum; that workers in arsenic, antimony, and other chemicals, in spite of live spermatozoa are sometimes sterile. Then I have had men who have had syphilis and are sterile, even though the examination of the semen showed motile spermatozoa. The sperm injected into the woman has both a local and a general effect. It has been demonstrated that the spermatozoa not used for fertilization enter the cells of the genital tract and are absorbed into the cell. This is a line of light on the immunal theory. Isn't it possible that a woman can be immunized; her serum so protected against the advent of the spermatozoa that it dissolves them when they come? Perhaps this explains—when the husband or wife has been sent away for six or eight months—successful fertilization. The law of incompatibles thus bids fair to be explained.

Dr. H. O. Pantzer, Indianapolis: His, the anatomist, said that the complexity of the genitalia in the human female is such as to make it, to him, a surprise that woman ever conceives. Regarding the nervous excitability referred to, I have this observation to mention, that women who have delayed menstruation frequently give evidence of a presenile sclerosis of the ovum. These cases are often associated with chronic intestinal auto-intoxication. This interrelation of toxemia and ovarian sclerosis is not surprising when we recall that toxemia strikes essentially at all glandular organs, and in all is followed by withering and sclerotic changes. It is surprising how many cases of spanomenorrhea or amenorrhea are helped by looking after systemic elimination. All will remember the reliance the older practitioners and gynecologists placed on elimination, as evidenced by the free laxative remedies invariably contained in their prescriptions.

Dr. Edward Reynolds, Boston: Some of the points about which Dr. DeLee spoke were omitted in my reading, but were in the paper.

I do not think the bicarbonate of soda routine for the acid vagina is a good thing. The acid nature of the vaginal secretions is, in all probability, merely the most superficial indication of the chemical changes which destroy the spermatozoa. The failure of such treatment in the vast majority of cases is because we only neutralize the acidity and not the other chemical alterations. I am unable to speak as yet of various studies which I have made, and have had made, and am making on the chemical and microscopic character of the secretions. So far as I know, the chemical and microscopic examination of the mixed secretion of the male and the female, as obtained from the female genitals, is, as yet, an entirely virgin field. There have been a number of men who have observed the spermatozoa and their action in those fluids, but the essential point which we cannot yet speak of is the microscopic and chemical examination of the mixed secretions; the establishing of a normal standard and the detection of abnormality. I have learned to recognize certain arrangements of pus cells, and have seen the spermatozoa swimming freely, come into one of those pus cells, tangle his poor little tail in it, stop his progress, thrash, thrash, thrash, and lie dead. You have to reduce that apparently normal cervical secretion. There are dozens of such things that we know nothing of. The question of immunity is a very curious and interesting one but from a practical standpoint on both the question of abnormal chemistry and immunity we must be careful how we determine our action in such cases by subjects that are so little worked out that our knowledge is hardly a gleam in the obscurity of our ignorance.

RELATIVE FREQUENCY OF ECTOPIC GESTATION *

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Why an impregnated ovum should implant and develop outside the uterus so relatively frequently in the human species and fail to do so in lower animals is a question the answer to which has been sought through investigation by clinicians and laboratory workers for a great many years. Clinicians agree that ectopic gestation is a frequent abnormality of early pregnancy but vary in their estimates of frequency depending on whether their clinical experience has been gained as a necropsy surgeon, a gynecologist, an obstetrician or a general practitioner. The large number of case reports indicate the frequency with which this condition is met by surgeons, but is too irrelevant to be of aid in discussing the subject statistically. In this paper, a statistical study of a definite number of patients will be made in order to estimate the relative frequency of ectopic gestation to disease in general, to women's disease, to pregnancy and to abortion. The small material presented makes the importance of the subject the sole excuse for presuming to answer these difficult questions.

The necropsy surgeon reports that he frequently meets ectopic gestation because sudden death associated with such a condition requires his services to satisfy the demands of the law. The gynecologist considers ectopic pregnancy a frequent condition because he does not take into account the many ordinary conditions which the man in general practice has treated before referring to him the patient with ectopic pregnancy. The obstetrician considers ectopic gestation a relatively rare condition because, through lack of understanding, the laity are prone to come to him only after the first three dangerous months of pregnancy are passed. It is an odd experience that a general practitioner may encounter several ectopic pregnancies quite close together and then practice for some time without meeting a case.

Formad,[1] who was a coroner's physician in Philadelphia, in 3,500 routine necropsies, found thirty-five deaths from ectopic pregnancy. Michel[2] has reported twenty-six cases of ectopic gestation in 6,000 gynecologic conditions, while Hartz[3] reports 3.4 per cent. of ectopic pregnancy in 1,700 specimens examined in the gynecologic laboratory at Jefferson and St. Joseph's hospitals in Philadelphia. Hennig[4] stated some years

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1. From an unpublished communication by Ellice McDonald.
2. Michel: Fortschr. d. Med., 1914, No. 23, p. 637.
3. Hartz: Am. Jour. Obst., 1915, lxxi, 601.
4. Hennig: Die Krankheiter der Erleiter und die Tubenschwangerschaft, Stuttgart, 1876.

ago that the directors of even large obstetric institutions might never encounter a case.

Although ectopic gestation is discussed in textbooks on obstetrics, no modern obstetrician has, to my knowledge, ventured an opinion of its frequency based on his personal experience. My own experience has been that for ten years, while limiting my practice to obstetrics, I did not treat a case of ectopic pregnancy in private or clinic work, but during the last three years while combining gynecology with obstetrics, I have operated on thirteen clinic patients and on seven private patients for this condition. The clinic cases form the basis for this paper as they were encountered at fairly regular intervals in a comparatively large number of patients.

From July 1, 1912, to May 1, 1915 (the time of writing), 36,668 patients have registered in the outpatient clinics of the Leland Stanford University, School of Medicine. Of this number, 2,955 have been treated in the women's clinic. In the clinic, fairly extensive histories of the patients were taken and a careful pelvic examination made, as well as considerable routine laboratory work started. A presumptive clinical diagnosis was entered on the history as soon as conditions justified such procedure. These facts are mentioned because often the diagnosis of early pregnancy is impossible, and because some patients, so soon as that diagnosis is made, fail to report to the clinic. Many cases of pregnancy abort or are aborted after leaving the clinic, and possibly some cases of ectopic gestation are overlooked. Taking these facts into consideration, it is interesting to note that of the 2,955 patients registered in the women's clinic, 554 were operated on for various gynecologic conditions. Of these, 353 were curetted and the curettings, together with the associated pathology, were studied in the laboratory for obstetrics and gynecology.

From these specimens there have been made seventy-three laboratory diagnoses of incomplete abortion and thirteen diagnoses of ectopic pregnancy, 1,225 of the 2,955 patients were confined by the clinic at or near term, which makes a total of 1,311 known pregnancies and 468 patients operated on who were known not to be pregnant.

The remaining group of 1,176 patients who did not enter the hospital includes undoubtedly some cases of pregnancy, but is composed largely of nonpregnant patients such as come to all clinics for treatment of minor gynecologic ailments, as well as patients past the childbearing period, and a few children. The statistical work with this group is not as accurate as with the hospital group and the proportion of pregnant to nonpregnant patients can be estimated only roughly. Still it is important to include with the known pregnancies a fair number of these doubtful cases. For ten years, I have recorded annually the percentage of pregnant patients that have failed to return to the San Francisco maternity clinic for confinement, and have found that, on the average, 25 per cent. of the applicants do so fail to return. Applying this experience to the present clinical material, 393 of the 1,176 doubtful cases, or 30 per cent. of the number of confinements, have been grouped with the known pregnancies, making a total of 1,704 pregnancies, and 783 have been grouped with the operated patients, making a total of 1,251 nonpregnant patients.

From these figures, it will be seen that we have met ectopic gestation thirteen times in 36,668 patients or once in 2,820 cases of illness such as a general practitioner would encounter in a practice covering the diseases of men, women and children. Thirteen cases of ectopic gestation among 2,955 women with pelvic symptoms, or once in 227 cases such as come to the specialist; and thirteen cases of ectopic gestation among 1,704 cases of pregnancy, or once in each 131 pregnancies!

Considering the pathologic diagnoses which have been made in the laboratory, it is seen that 86, or 5.33 per cent. of the pregnant patients were sent into the hospital because of bleeding, and were curetted. A study of these curettements has shown that thirteen of the 86 patients, or nearly 17 per cent. of possible abortions, were flowing because they were suffering with a misplaced pregnancy.

This does not indicate the relative frequency of abortion to pregnancy, which has been estimated by Taussig[5] as high as one abortion to every 2.3 labors, but will, I believe, call attention to the possibility of

CLINICAL SUMMARY OF ETIOLOGIC CONDITIONS IN ECTOPIC GESTATION

Case	Age	Grav.	Para	Abortions, Induced	Abortions, Spontaneous	Gonorrhea	Last Preg. Yrs.	Leukocytosis 10,000+	H. Per Cent. 60 or Lower	Tube Rupt.	Tube Uarupt.	Tube Abor. Comp.	Tube Abor. Incomp.	Clinical Diagnosis ‖	Salpingitis Microscopic	Tube clitis	Fetus Present	Mortality, Fetus	Mortality, Mother
1	25	iv	ii	0	1	+	5	?	?	..	..	..	+	Pelvic abscess	+	—	—	+	—
2	35	vii	ii	v	0	+	6	+	?	+	..	+	..	Salpingo-oophoritis	+	+	+	+	—
3	30	iii	i	0	1	—	7	—	+	+	..	..	..	Ectopic	+	—	—	+	—
4	35	iv	h	i	0	—	5	—	—	..	..	..	+	Ectopic ?	—	—	—	+	—
5	28	iii	i	i	0	+	11	+	?	..	..	..	+	Pelvic abscess	+	—	—	+	—
6	26	ii	0	i	0	+	12	+	+	..	..	..	..	Appendicitis	—	+	+	+	—
7	23	ii	0	0	i	—	2	+	+	+	..	..	..	Salpingitis	+	+	—	+	—
8	29	ii	0	0	i	—	7	+	—	..	..	..	+	Pelvic abscess	+	+	—	+	—
9	34	i	0	0	0	—	0	+	—	..	+	..	..	Uterus retroverted	+	—	+	+	—
10	40	ix	v	iii	0	—	1	?	+	+	..	..	..	Kidney stone	+	—	—	+	—
11	21	i	0	0	0	+	0	+	+	+	..	..	..	Ectopic ?	—	+	—	+	—
12	24	ii	0	0	0	—	6‡	+	—	..	..	..	+	Incomplete abortion	—	—	—	+	—
13	29	iii	i	0	i	—	8	?	+	..	+	..	..	Incomplete abortion	—	+	+	+#	—
Aver.	30	iii	i	..	..	..	6	80%	60%	..	..	..	..	.....	60%	40%	30%	100%	0
Total	..	45	14	11	5	4	..	..	..	5	2	1	5						

* At operation there was found a leather-like fetus 3 cm. long compressed between a pus tube and the fibrous uterus. The patient survived a tube abortion, which undoubtedly occurred six years ago, associated with an attempted criminal abortion.
† In the laboratory there was found a hematosalpinx containing cartilage cells which, with the history, gave evidence that the patient survived an ectopic pregnancy four years ago, mistaking the conditions for a spontaneous abortion.
‡ Ectopic pregnancy. Left tube and ovary removed. ‖ On hospital entrance slip. # Fetus alive at time of operation.

5. Taussig: Prevention and Treatment of Abortion, St. Louis, 1910.

confusing ectopic gestation with incomplete abortion and should put the general practitioner on his guard when treating such cases.

Albucasis,[6] an Arabian surgeon of the eleventh century, is said to have first described ectopic pregnancy. For generations the etiology of the condition was little understood, but gradually the idea prevailed that, in many cases at least, an inflammatory condition of the adnexa was the predisposing cause.

Dr. William Campbell[7] accumulated these data and published a monograph which later formed the basis of Parry's[8] work and to whom Lawson Tait[9] gives great credit in discussing the subject.

Lawson Tait[9] said, "I believe it to be more than likely that the real cause of this accident is the coincidence of a set of circumstances the most important of which is the destruction or insufficiency of the ciliary movement." Since Tait made this statement, however, investigators have shown that often the cilia are not destroyed. Moreover, the condition of round-cell infiltration, of destruction of the surface epithelium, of agglutination of the septa of the tubes, of edema and fibrosis, which are frequently present in the ectopic tube, are stated by some pathologists to depend on the condition of the existing pregnancy or the recent rupture of the tube rather than a preexisting inflammation. Careful sections of the tubes also show that in some cases the ovum has lodged in a blind passage supposed to be a congenital abnormality.

Webster[10] states that the ovum always imbeds in müllerian tissue and Huffman,[11] on theoretic considerations, carries his idea farther by stating that the ovum always imbeds, in cases of ectopic pregnancy, in anomalous imbedding areas. While these theories are attractive, they lead away from the clinical idea of inflammation and tend to place the predisposing cause of the condition on an unchangeable hereditary basis rather than on the basis of previous inflammatory affections which are preventable. Moreover, it should not be forgotten that decidual reaction of early pregnancy has been noted in the tissues of practically all the organs of the lower abdomen, including the omentum and the appendix.[12] Leo Loeb[13] recently concludes that guinea-pigs do not have ectopic pregnancy because it is impossible to create in them a decidual reaction outside the uterus. One reason for the frequency of ectopic gestation in human beings undoubtedly depends on the ability of the tissues into which the ovum penetrates to develop decidua, which affords the ovum an adequate soil for development, but this does not eliminate the fact that pelvic inflammations often result in deformities of the tubes, which causes the ovum not infrequently to imbed outside the uterus.

A clinical summary of the cases here reported is presented in chart form and from this it will be seen that the average age, the multigravida, the number of preceding induced and spontaneous abortions as well as attacks of gonorrhea, the period of relative sterility and the microscopic findings all point strongly to the clinical idea of Tait that many of the cases of ectopic gestation trace their etiology to a preceding pelvic infection. It might be added that gonorrhea plays the minor rôle, and that abortion, associated as it so often is with a more or less noticeable attack of salpingitis, is the major predisposing cause for this frequent, dangerous anomaly of pregnancy.

6. Aboulcassem Khalaf ben Abbas Ezzahraony.
7. Campbell, William: A Memoir on Extra Uterine Gestation, Edinburgh, 1842.
8. Parry: Extra Uterine Pregnancy: Its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis and Treatment, Philadelphia, H. C. Lea, 1876.
9. Tait, R. Lawson: Diseases of Women, Philadelphia, Lea, 1879.
10. Webster: Study of a Specimen of Ovarian Pregnancy, Am. Jour. Obst., 1904, L. 28.
11. Huffman, Otto V.: A Theory of the Cause of Ectopic Pregnancy, The Journal A. M. A., Dec. 13, 1913, p. 2130.
12. Meyer, R.: Ektopiche Decidua, Ztschr. f. Geburtsh. u. Gynäk., 1914, lxxv, 760.
13. Loeb, Leo.: Tr. Soc. Exper. Biol. and Med., 1913, xi.

CONCLUSIONS

From a statistical study of 36,668 clinic patients, the relative frequency of ectopic pregnancy is estimated as follows:

General practice	Once in 2,820 cases
Gynecology	Once in 227 cases
Pregnancy	Once in 131 cases
Early pregnancy with hemorrhage (necessitating curettement)	Once in 7 cases

Lane Hospital.

ABSTRACT OF DISCUSSION

Dr. Joseph B. De Lee, Chicago: Ectopic gestation occurs not infrequently in the lower animals, the horse especially, the cow and others. I know an interesting case in a house dog, running for six or eight weeks with symptoms of peritonitis. A roentgenogram disclosed the location of the fetus, an operation was performed, and a happy recovery made. As to the frequency of ectopic gestation, in my early years, in my hospital services everything except the actual delivery of a baby was assigned to the surgeon or to the gynecologist, and therefore, the obstetrician did not get the cases. He was considered perhaps one or two degrees better than a midwife, and of a different sex. This was the only distinction that I could learn. But as I began to assert my rights, and obtained all the obstetric cases, I found that the frequency of extrauterine pregnancy was increased. Perhaps we are losing sight of the point that so-called colics shortly after marriage, sometimes diagnosed as appendicitis, are not infrequently ectopic gestation aborting through the tube. You all know prostitutes' or actress' colic, and occasionally you hear of an actress being carried off the stage in a fainting condition. These are frequently cases aborting through the fallopian tube, and if properly diagnosed would increase the number of ectopic gestations which occur.

Dr. Alfred B. Spalding, San Francisco: I am not very much of a veterinarian and cannot dispute the point with Dr. DeLee about the ectopics occurring in the lower animals, but a great deal of work along this line has been done by others and many of the supposed cases of the ectopics in lower animals have been considered to be due to rupture of the uterus and to a secondary implantation of the ovum in the abdominal cavity.

Also the relation of the tube to the double uterus in the lower animals is different from that found in the human being. Loeb's work was on guinea-pigs. He found that it was impossible to make them have an ectopic pregnancy by any mechanical or experimental means, and they are not supposed to have an ectopic from natural causes. He was able in one case to get a supposed ectopic from a suspected rupture in the tube, which later was found to be a rupture of that part of the uterus which forms the connecting link between the two.

Responsibility in Rural Sanitary Improvement.—Again, this is within the purview of the county health officer. But the broadening of the outlook of the resident of the rural district is not the obligation of one man or one profession. The duty is shared by the church, the sociologist, the teacher, the minister, the welfare worker, in fact by all who bear responsibility because of position or knowledge. Where to begin is a point to be considered by each institution or worker in his own locality, but that each should do his part admits of no discussion.—Oscar Dowling, *American Journal of Public Health*, May, 1915.

STREPTOCOCCUS BACTEREMIA IN ENDOCARDITIS

ITS PRESENCE BEFORE AND DURING THE DEVELOPMENT OF ENDOCARDIAL SIGNS *

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The frequent occurrence of a bacteremia has long been suspected in certain cases in which blood cultures have always been negative. One has often felt that our blood-culture methods were very imperfect, that we failed to grow an organism when one was present. Rosenow's methods[1] are a decided advance and have placed in our hands means of investigating a large variety of diseases from which may come findings that will change present views of common diseases. The importance and wide range of the pathogenic influence of streptococci will become generally better appreciated and the association of certain diseases formerly often observed is even now being placed on a definite bacteriologic foundation.

In the heart clinic recently established at the Toronto General Hospital, in connection with the general medical outpatient clinic, it was felt that blood-culture methods similar to Rosenow's might well be applied to the investigation of cases of suspected endocarditis since this affection is so often observed in those who have never had rheumatism. It would appear reasonable that all cases of endocarditis are bacterial in origin, that the organism must be present in the blood for long periods at a time and could be demonstrated if our cultural methods were sufficiently perfected.

There was attending the medical outpatient department during the summer of 1914 a girl (the patient in Case 1) whose case had been diagnosed previously in Ward G as one of pulmonary tuberculosis. However, she had no cough or signs of activity and her morning pulse rate was too slow. Yet she had slight fever, the temperature reaching 99 to 99.4 on an average about twice a week. There was then no murmur present. It was this case that suggested the great value of an efficient blood culture. Success along this line has been attained even beyond expectations, so that now cases formerly diagnosed as cases of chlorosis, anemias, indefinite attacks of fever, obscure tuberculosis and especially "nervous breakdowns" are being called endocarditis.

In this method we have a means, second to none other, of diagnosing this interesting and important disease. Indeed in a few cases it has been the only evidence obtained. A bacteremia has been obtained before the onset of the murmur or thrill and in the presence of a normal temperature. Still this technic is not all-sufficient. A culture was taken in a case of endocarditis and general acute serositis following inflammatory rheumatism three or four weeks before death. The culture remained sterile and at necropsy streptococci were cultured from the heart's blood and were even found in direct smears from the spleen. Still, positive cultures have been obtained when scarcely suspected and in rather more than half of the cases investigated.

This communication is a preliminary report of the presence of a nonhemolytic streptococcus, usually, though not always, producing green on blood agar, in the blood in some twenty-six cases of endocarditis investigated by a modification of Rosenow's culture methods during the past six months. The first twenty-three histories are pointed out for special consideration, as most of them represent a class of very mild endocarditis from which it is thought that positive blood cultures have hitherto not been obtained. The last three are added chiefly for comparison as they conform to the variety commonly called in the literature "subacute bacterial endocarditis." Owing to lack of time and the depletion of the staff of the bacteriologic and pathologic departments by the war, in only a small percentage of suspected cases could cultures be made. Seven of the cases were found among the private patients of one of us (J. A. O.), in course of a small general practice in six months. At least as many others have been encountered in the same time in which cultures were not taken for reasons of age or convenience. During the same time only two cases of rheumatic fever have been treated in private practice and the three last cases (24, 25 and 26[2]) are all that have been recognized of subacute bacterial endocarditis of literature type during the same or longer time in both hospital and private practice. If the figures are at all representative, the incidence of a mild form of endocarditis, of the type to be described, must be far greater than the so-called rheumatic endocarditis, or the subacute bacterial (*Streptococcus viridans*) form. The relationship between these varieties remains to be determined.

In April, 1914, Simons[3] published a critical review of bacterial endocarditis of all forms, summing up very well indeed present-day ideas of this disease. He defines it as those cases (1) which are either acute or chronic, (2) are associated with the presence of bacteria in the valvular lesion and (3) in the circulating blood for some (usually a considerable) period of time and (4) are usually of fatal outcome. The idea is current that if organisms are present in the blood, especially in sufficient numbers to be recovered by culture, the case will end fatally in from a few weeks to two years. Simon uses the term bacterial endocarditis to include all organisms (except spirochetes). In this article, however, it is restricted to the type of case so well described by Osler,[4] Libman,[5] Schottmüller[6] and others, under such names as subacute infective or subacute bacterial endocarditis, endocarditis lenta, etc., and caused by a streptococcus variously named *Streptococcus viridans* or *mitis* (Schott-

* From the Department of Bacteriology and Department of Medicine, University of Toronto.
* Presented before the Association of American Physicians, Washington, May, 1915.

1. Rosenow, E. C.: The Newer Bacteriology of Various Infections as Determined by Special Methods, THE JOURNAL A. M. A., Sept. 12, 1914, p. 903.

2. Owing to lack of space a number of the case reports have been omitted from THE JOURNAL. They will be found in full in the authors' reprints, a copy of which may be had by sending a stamped directed envelope to the author.

3. Simons, I.: Critical Review, Bacterial Endocarditis, Quart. Jour. Med., 1914, xxii, 291.

4. Osler, William: Chronic Infectious Endocarditis, Quart. Jour. Med., 1908-1909, ii, 219.

5. Libman and Celler: The Etiology of Subacute Infective Endocarditis, Am. Jour. Med. Sc., 1910, New Series, cxi, 516.

6. Schottmüller: Endocarditis Lenta, München. med. Wchnschr., 1910, lvii, 617.

müller), the endocarditis coccus (Libman), modified pneumococcus (Rosenow), saprophytic streptococcus (Horder), and others. It is generally accepted that these terms all apply to the same organism now usually called the *Streptococcus viridans,* though it must be remembered that this term includes a variety of strains of all grades of virulence and having special "affinities" for many different tissues.

Recoveries from the type of *S. viridans* endocarditis described above are very rare but do occur. All recoveries reported can be counted on the fingers. Now if every case of endocardial inflammation (that is, the so-called simple endocarditis, not including the arteriosclerotic form) be bacterial in origin, then all Simon's conditions characterizing bacterial endocarditis should be fulfilled except the fourth. It is certainly safe to predict that all of these twenty-three cases are not going to end fatally in two or even twenty years. It is a well-recognized clinical fact that simple endocarditis can heal and remain healed for a lifetime.

Characteristic symptoms and signs of "subacute bacterial endocarditis" are malaise, fever of all grades, chills, progressive emaciation, weakness and anemia, hematuria, petechiae and other signs of embolism (hemiplegia, etc.) sweats, pigmentation, enlarged spleen and a terminal leukocytosis. Cases 24, 25 and 26 are types of this form of the disease, J. H. (Case 24) dying of emaciation, weakness and anemia, another patient (Case 25) of hemiplegia and one (Case 26) of embolism of the mesenteric artery, followed by gangrene of the small intestine, perforation and peritonitis. The majority of the main series (Cases 1-23) have shown very few of the preceding symptoms (some none), but some have shown just enough to suggest that they might be mild forms (Case 1 especially) and that there is a gradation in severity from the mildest (Cases 15, 7 and 8) to the severest case (Case 1) in which there is anemia, joint pains and considerable fever. Case 4 shows continual fever, nephritis and slightly enlarged spleen. None of the series is characterized by *progressive* emaciation, weakness and anemia. What anemia and weakness has existed has not progressed, indeed has improved, though of course the time of observation has been short. The patient in Case 1 has been under observation one year. Most of the patients look perfectly well, feel well and have no anemia. Hemoglobin below 60 per cent. was found in three cases. Six patients had no fever when the blood culture was obtained or while under observation, except a slight rise for a few days following removal of tonsils. The characteristic temperature appears to be an irregular one, normal all day, often for some days at a time, yet reaching 99 or 99.5 two or three days a week at irregular times of the day. To detect this the temperature must be taken systematically for considerable periods of time.

In seventeen cases the diagnosis was obscure, and was cleared up by the culture. In two or three, tuberculosis was suspected and may be present. T. D. (Case 9) conformed to the textbook description of chlorosis. Some suggested gastric ulcer. Two patients had symptoms somewhat similar to those in mild cases of typhoid (G. F., Case 11, and Mrs. H., Case 16). In fact both had suspicious Widal reactions and G. F. had an enlarged spleen and erythematous spots on the abdomen. But neither had the prostration, coated tongue, or malaise of typhoid, and were ill too short a period of time. E. K. (Case 4) had symptoms of meningitis. But the most characteristic group was that made up of "neurasthenics." Nine complained of fatigue, weakness, depression, irritability, restlessness, crying attacks, etc. "Nervous breakdowns" were common. The preponderance of young adult females in the series was striking. Five were males and eighteen females. Seventeen were between the ages of 16 and 41. Now, when one is consulted by a neurasthenic, the temperature is taken carefully for two weeks, and if fever be present in the slightest degree, or even in the absence of fever, if a history of tonsillitis is obtained, and diseased tonsils and endocardial signs found, a blood culture is taken. Some seventeen neurasthenics have been investigated and a positive culture obtained in nine cases. Seventeen had no cardiac complaint or symptoms when first seen. Eight had, or developed while under observation, a precordial pain, radiating to the left shoulder and down the arm, usually associated with dyspnea and brought on by exertion. This anginal pain in many cases was apparently quite out of proportion to the physical findings and often associated with cutaneous hyperesthesia. Tonsillitis was the usual precursor. In the children (Cases 2, 11 and 22) it was the continuance of the fever after tonsillitis that suggested endocarditis. One waited three or four weeks after the acute attack of tonsillitis before the culture was taken.

A history of tonsillitis occurring in other members of the family was noted in ten cases. In the case of R. F. and G. F., brothers, the mother is subject to tonsillitis and was ill one year with "low fever" at 19. During the last winter the two boys, the mother and the nurse had, each, two or three attacks. In another family the spread of tonsillitis and associated diseases was remarkable. The mother, who has often had nervous breakdowns, had tonsillitis in December. Shortly afterwards the husband had it also, followed in a month by appendicitis, and two or three weeks later, by a second attack with operation. While he was in the hospital the daughter, aged 5, had tonsillitis, after which slight fever persisted for five or six weeks and a pulmonary and mitral systolic murmur developed for the first time. During this interval the baby had a sore throat. About the same time the nurse went home with tonsillitis. While she was away the other maid, the last member of the family, was taken ill with appendicitis and operated on. While she was convalescing the nurse, who had returned, had appendicitis also, with operation. While the little girl was ill with endocarditis the mother's sister came on a visit and two or three days after her arrival she too had an attack of tonsillitis. Several other members of the mother's family have had tonsillitis often, some with endocarditis.

L. M. (Case 7) is interesting, showing the relationship of tonsillitis, endocarditis, appendicitis and gastric ulcer. Chronic appendicitis is blamed for causing gastric and duodenal ulcer. Possibly the real explanation is that both are results of the one infection. None of the series showed cholecystitis but two patients had herpes zoster.

The mitral valve was affected in nearly every case; the aortic in only one or two. In three cases endocarditis was suspected, before the murmur developed. In two the culture was obtained before any murmur could be heard and in two others the only murmur present when the culture was obtained was a faint

systolic heard in the second left interspace over the border of the heart. There is some reason for thinking that this pulmonary systolic murmur is very often, more often than is thought, a transmitted mitral murmur, heard over the left auricular appendix. In most cases of mitral regurgitation, when looking at the cardiac action with a good screen, one can see a quick systolic dilatation in the left heart-vessel angle, which suggests a left auricular appendix being dilated with regurgitating blood. This has been seen when only a pulmonary systolic murmur could be heard on auscultation. In three or four cases in which opportunity has been had for watching the development of mitral regurgitation the murmur was first heard in the pulmonary area and later (a few weeks, or in the case of Patient 1 nearly two months) in the mitral area. Moreover, in many cases of mitral incompetency a louder murmur is heard in the pulmonary area, or the space below it than at the apex; and in all cases of mitral regurgitation, observed recently, a pulmonary systolic was present as well as the mitral.

In only one or two of the series was any cardiac enlargement present and that not at all extreme (most in Cases 21 and 6). Four patients had a leukocytosis of short duration (Cases 1, 6, 14 and 19). Six showed signs of nephritis. Five had gastric symptoms. These are often very troublesome and difficult to explain. One had painful subcutaneous nodules on the hands. None had petechial hemorrhages.

Should the presence of the bacteremia alter the prognosis? Probably not, for we have learned from clinical experience that most of these patients get better and live many years. Most of them were too slightly ill to ordinarily be kept in bed. The prognosis of Patients 1 and 21 is uncertain. The latter has a severe anemia and syphilis. Next to these the cases of chronic endocarditis following rheumatism and chorea are most serious (Cases 6, 12, 13 and 14). Patient 6 is a small girl with a fairly well-advanced mitral stenosis. Still, even she should live longer than the two or even three and a half years allotted to the previously recognized cases of subacute bacterial endocarditis.

In treating them, at first in every case the patient was put to bed, with the idea that every one with an active endocarditis should be at rest. Most of the "nervous" patients improved rapidly while in bed, but six did not show much change. Of these six, four have shown improvement since being allowed to be up and about, especially in Cases 3, 10 and 11. E. J. (Case 1) got up against advice and she became no worse. In fact she has lower fever now than she has had for six months. She is the most ill of the series. Hers would be classed as a type of mild case of the subacute bacterial endocarditis of the literature. Eight patients have had their tonsils out while under observation. Of these one (Case 9) improved afterwards. Cases 2 and 10 were uninfluenced. Cases 16 and 22 have been too recent to draw conclusions. The other three patients were so slightly ill before the operation that no difference in symptoms was noted.

The patients were kept in the fresh air as much as possible, encouraged to eat and given iron. Quinin appeared to give benefit in one case. Autogenous vaccines were administered in seven cases. Large doses were worked up to, usually without reaction. Recently it has been customary to start with 500 million streptococci at the first dose and 1,000 million at the second in the effort to obtain a reaction. Two patients with these doses had local reactions (Cases 1 and 5). It is difficult to see any difference in the course of those cases in which the patients were given vaccines, and those in which they were not.

The organisms recovered in the cases cited in this paper are being studied both as to their reactions and by animal experimentation. A detailed report of the results will be given at a later date.

CONCLUSIONS

1. A streptococcus bacteremia is present in the great majority of cases of active endocarditis and probably in all in some stage of the disease.

2. Endocarditis more commonly follows tonsillitis in children and young adult females than is generally believed. Possibly this accounts for the frequency of mitral stenosis in females.

3. This low grade streptococcic endocarditis is much more common than the so-called rheumatic endocarditis.

4. A large number of persons showing symptoms of the neurasthenic type are really suffering from a subacute streptococcic endocarditis.

5. Endocarditis may be active for considerable periods of time without symptoms.

6. A family incidence of tonsillitis and endocarditis (also appendicitis, gastric ulcer and other diseases which are often of streptococcic origin) is of frequent occurrence.

7. The pulmonary systolic murmurs so frequently found in "run-down" and anemic individuals are rarely functional.

On the other hand they usually indicate mitral regurgitation.

REPORT OF CASES

CASE 1.—E. J., aged 22, was admitted to Ward G, Toronto General Hospital, June 2, 1914, complaining of general weakness and backache for seven months with dizziness, fainting, dyspnea and palpitation. Her family history is negative. She has had measles, mumps and chickenpox and has been anemic since 17. Two years ago she was confined to bed three weeks with fleeting pains in many joints without tenderness or swelling. The doctor diagnosed grip or muscular rheumatism. From Christmas, 1913, she lost 30 pounds in weight; had morning cough and expectoration, with pains in various joints and throughout the chest till the time of admission. Examination showed some dulness with bronchovesicular breathing found over right apex with no râles. The heart was normal in size, sound clear and distinct. No murmurs. The tonsils were found diseased and removed in July, 1914. On admission, the blood count showed red blood cells 2,500,000, hemoglobin 58 per cent., white blood cells, 8,000. Urine normal. When discharged, July 28, the count showed red blood cells 3,700,000, hemoglobin 75 per cent. Her condition was much improved. While in the hospital the patient's temperature went above 99 five times in fifty-two days and reached 99 on seven other days. The pulse averaged from 70 to 80. The patient attended the outpatient department till December 8. During this time the temperature continued as described above. The pulse was slow in the morning—50 to 60—going to 90 and 100 in the afternoons. During August a systolic thrill in the mitral area was detected. In September a precodial pain developed, brought on by exertion and associated with dyspnea. At the same time there was a suspicion of a pulmonary systolic murmur. On December 8 the patient was readmitted to the hospital (on account of angina pain and a slight swelling of the feet) for a rest. At this time the heart was not enlarged and the presence of a mitral systolic murmur was questioned. A pulmonary systolic murmur on exertion could be heard. On December 18 her temperature rose to 100.5 and from then till now (June, 1915) her temperature has oscillated

from 97 to 102, reaching the high point at irregular intervals, sometimes a. m., sometimes p. m. There has been no cough since June, 1914. The pulmonary condition is unchanged. The murmurs are becoming rougher. December 24 blood culture taken by Rosenow's method showed *Streptococcus viridans* on the second day. January 13 the mitral murmur was loud and rough with a rougher pulmonary systolic murmur and accentuated pulmonary second sound. Red blood cells, 3,920,000; hemoglobin, 65 or 70 per cent.; white blood cells, 9,000; polymorphonuclears, 72 per cent. The urine showed a few granular and hyaline casts. Spleen and liver were not enlarged. The patient remained in bed three and one-half months with no improvement. Since April 1 she has been going about with her condition unchanged except the temperature does not go quite so high. She has been given autogenous vaccine (500,000,000 per dose) which gave a local reaction about 2 inches in diameter but which has not altered her condition.

Case 2.—R. F., a boy aged 5 years, 9 months, was seen on Feb. 15, 1915, complaining of feverishness continuing after tonsillitis. His mother often has severe tonsillitis and had endocarditis for one year at 19. Brother has subacute *Streptococcus viridans* endocarditis. Had an attack of feverishness without evident cause in 1912 and again in November, 1913. Examination showed a bright boy, slightly pale, restless, constantly moving. The organs were normal except the heart, which showed a systolic thrill and murmur in the mitral and pulmonary areas. On March 9 a blood culture showed *S. viridans*. The urine showed a small amount of albumin and granular and hyaline casts. Red blood cells, 4,500,000; white blood cells, 7,500; hemoglobin, 80 per cent. For the past four months his temperature has averaged slightly above 99, reaching 99.8 or 100 two or three times a week. He was given 8 or 10 doses of autogenous vaccine, beginning with 25,000,000 and increasing to 400,000,000 with no appreciable effect on the course of the disease. April 24 his tonsils were removed, cultures from which gave *S. viridans*. The boy has been in bed four months during which time he has grown and improved in general appearance. He now looks and feels perfectly well, yet the fever continues unchanged. His mitral murmur has become fainter.

Case 3.—C. M., aged 41, a nurse, was admitted to the Toronto General Hospital Feb. 14, 1915, complaining of fatigue, nervousness, general pains in limbs and back, coccygodynia, palpitation of the heart and slight dyspnea on one or two occasions. Her right knee was swollen for two or three days. She had had no previous illnesses except repeated "nervous breakdowns." Was off work four months in 1913 for coccygodynia and a nervous breakdown. Family history negative. The patient was a well-developed, well-nourished woman with all organs normal except the heart, which showed mitral and pulmonary systolic murmurs, without cardiac enlargement. Pulse averaged 70 to 80. The temperature reached 99 nearly every day and on four occasions reached 99.5 between February 14 and April 28. Red blood cells, 5,000,000; white blood cells, 8,700; hemoglobin, 75 per cent.; polymorphonuclears, 72 per cent.; systolic blood pressure, 115; diastolic, 78. The urine, specific gravity 1.015, showed a trace of albumin and red cells on one occasion and always a few granular and hyaline casts. On February 14 a Rosenow blood-culture showed *S. viridans*. An autogenous vaccine was given up to 700,000,000 per dose with no reaction or appreciable effect. Patient remained in bed for two months without change. She was then allowed to be up and to walk about. Her temperature ran higher for two or three weeks, then became normal and has remained so with a corresponding improvement in symptoms.

Case 4.—E. K., a nurse, aged 21, entered the hospital Feb. 19, 1915, complaining of severe pain in the lumbar region and in the front of thighs. Six weeks previously she was in bed three days with tonsillitis accompanied by an urticarial rash. Three days before admission pain began in her thighs and two days later in her back; it was severe enough to prevent sleep and require three-fourths grain of morphin a day. Family history negative. She had no previous illnesses except tonsillitis. Heart, lungs, liver and spleen were normal. No retraction of the head or Kernig's sign. Reflexes normal. Sensation normal. On February 22 a lumbar puncture was done and an antimeningococcus serum given as there were several cases of meningitis in the hospital at that time. The fluid was clear, cell count 4 or 5.

February 23, her condition was unchanged. A second lumbar puncture showed a turbid fluid. A slight hemorrhage prevented an accurate cell count but the fluid which came last contained many polymorphonuclear leukocytes, lymphocytes and endothelioid cells. A smear showed numerous gram-positive diplococci. On account of the absence of other signs of meningitis and the localized nature of the pain, the cord condition was considered focal and possibly embolic, though no cardiac murmur was present. Two days later a blood culture was taken which showed a gram-positive coccus growing in pairs and short chains, which on further culture proved to be *S. viridans*.

March 1 a dark brown pigmentation in the form of a coarse network developed on the inner side of the thighs. The pigmentation corresponded to the purple mottling which occurs on the arms and legs in vasomotor disturbances. This pigmentation has persisted for nearly three months. March 7 the pulmonary second sound was noted accentuated and a very faint systolic murmur was heard in the pulmonary area. She constantly moved about in bed.

March 25: Pains in the thighs have continued till now. A soft pulmonary systolic murmur is still heard.

March 31: Some pains are still present in the knees and thighs.

April 2: A systolic murmur is heard in the mitral area.

April 12: The patient is feeling fine, the mitral systolic murmur is becoming louder.

May 10: The heart condition is unchanged. Patient is feeling perfectly well.

May 23: The patient began to sit up.

June 18: Patient can go upstairs with very slight increase in the rate of the heart's action, with the rate returning to normal in less than a minute on lying down. During the first ten days of this period the temperature remained above 99, reaching on one occasion 101.5 usually going from 99 to 100 daily. From March 1 to the time of discharge on June 19 the temperature has reached 99.4 on fifteen occasions. At periods it remained below 99 for a week at a time. The urine contained a trace of albumin and red blood cells on two occasions. White blood cells, 12,000 on admission, were found 8,000 in a week and remained from 8,000 to 9,000. Red blood cells, 4,200,000 on admission. When the patient was discharged, red blood cells, 5,200,000; hemoglobin, 74 per cent.; systolic blood pressure, 104; diastolic, 84. On June 1 a second blood culture was positive in both aerobic and anaerobic cultures.

Case 5.—Dr. M., aged 25, entered the hospital on March 12 for tonsillectomy. He had had tonsillitis five or six weeks before, which was followed by pains over the tendons of his legs and in his ankles. He had rheumatic fever at the age of 9, and was ill several weeks. He had rheumatic fever at 14, and was in bed three weeks. He had tonsillitis frequently every year. His father had rheumatism. The patient was well nourished, well developed, did not appear ill, the heart was not enlarged. Systolic murmur in the mitral and pulmonary areas; was heard best in the pulmonary area. For two or three weeks following the operation there was arthritis in the wrists and shoulders. He had secondary hemorrhage from one tonsil on March 21. March 26, an aerobic blood culture was sterile. April 5, (three weeks after operation) an anaerobic blood culture gave hundreds of colonies of *S. viridans*. On May 25 both anaerobic and aerobic blood cultures were negative. Red blood cells, 5,500,000; white blood cells, 9,000; hemoglobin, 80 per cent. Urine negative. He was given 6 doses of autogenous vaccine—the first 500,000,000 streptococcus, the second and others 1,000,000,000. These produced local reactions. From time to time the murmur varied in intensity, becoming louder and rougher and then softer and fainter. He was discharged.

June 5: During all of this time his temperature was normal with the exception of two days following the operation when it reached 99.5 and 100 respectively.

CASE 6.—Miss B, aged 8½, weighed 3½ pounds at birth. At 2½ years she had adenoids and otitis media. The adenoids were removed. The heart was normal. In June, 1912, she began to be restless at night with night terrors, which lasted six weeks. Then she began to have nausea and pallor in the mornings with no elevation of temperature. On the fourth day her heart was said to be badly diseased. After three weeks there was marked muscular twitching and loss of voice, said to be chorea. She was confined to bed until the end of October. All of this time no record of temperature was kept. In the beginning of November she was allowed to be up and in December the doctor said the heart was as well as ever it would be. In February, 1913, she contracted a catarrhal cold and looked very tired. The doctor found the pulse rate 145 and the heart violent and irregular in action with a low afternoon temperature. Twitching movements of muscles again appeared. In a period of improvement in March the tonsils were removed. She was confined to bed until June 5 but was not allowed to walk until September, at which time the heart was apparently normal in size and no murmur could be made out. In October, after strenuous exercise, a soft systolic murmur could be detected.

In December 1913, she had a slight catarrhal cold. Between this and Easter, 1914, she had two colds with high temperature, but was only confined to bed for two or three days. The heart seemed unaffected. The child continued active and strong except in September, 1914, when abdominal tenderness led to a reexamination and it was stated that no abnormal condition could be found in the heart. In November she was examined again for abdominal pain. At this time there was a slight systolic murmur. In February, 1915, she had a catarrhal cold, contracted from the mother, marked sore throat, glandular enlargement, high temperature, and a leukocytosis of 19,000.

The heart was dilated, very rapid, with a harsh presystolic and systolic murmur. In April a Rosenow blood-culture gave a plentiful growth of *S. viridans*. Leukocyte count, 11,000. At this time quinin—3 grains four times a day—was administered. The temperature gradually fell to normal in about two weeks' time. Vaccine 1,000,000,000 increased to 2,500,000,000 every fourth day. Only once was there local reaction. The pulse rate ranged from 88 to 110. On June 10 the child was allowed to get up. The pulse rate increased only 5 to 10 beats during the first three or four days, then remained about 100 until the present date. The child is up and playing about, six hours a day. At no time throughout the course has there been found any abnormal urinary secretion.

CASE 7.—L. M., aged 24, a nurse girl, entered Ward G for investigation of symptoms of indigestion consisting of heartburn and nausea. She also complained of weakness and fatigue. Her mother died of heart disease at 37. The patient's tonsils were removed incompletely (?) ten years ago. She had appendicitis with operation six years ago; tonsillitis two years and 1 month ago; two attacks of gastric ulcer twelve and nine months ago. Has vomited "coffee grounds." The organs are normal except the heart, which shows a rough mitral and pulmonary systolic murmur with no cardiac enlargement. The tonsils were badly diseased. Red blood cells, 4,800,000; white blood cells, 8,000; hemoglobin, 75 per cent. Urine normal. Test meal and bismuth meal revealed nothing abnormal. Tonsils were removed May 23 and showed marked disease. Cultures from the tonsils and the Rosenow blood-culture showed *S. viridans*. The temperature reached 99 occasionally. The patient felt perfectly well after a week's rest in bed.

CASE 8.—E. B., aged 25, a music teacher, was referred from Dr. L. on April 23, 1915, for investigation, on account of two attacks of iritis lasting three weeks. She complained of being run down, tiring easily, headaches and some depression. Has had headache over the right eye all her life. She was operated on for fibro-adenoma five years ago and hernia eight years ago. One month ago she had tonsillitis. Her sister is subject to tonsillitis. The mother died of appendicitis. On examination the patient, a well-nourished woman, did not appear ill. The heart showed no enlargement or thrill. There were systolic murmurs in the mitral, pulmonary and aortic areas. Spleen slightly enlarged, by percussion not palpable. Other organs normal. Red blood cells, 4,900,000; white blood cells, 6,600; hemoglobin, 85 to 90 per cent. Crypts of the tonsils contained an exudate. The temperature was normal. A blood culture on April 28 showed profuse growth of streptococcus. The tonsils were removed May 31. Cultures from the tonsils showed a similar strain of *S. viridans* to that obtained by blood culture. After six weeks' rest she feels perfectly well. Her temperature continues normal.

PROSTATECTOMY MISTAKES AND FAILURES *

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Having in mind some of my own failures and believing we can often learn more from the consideration of mistakes than from successes I sent out a questionnaire to a number of my friends, having for its object an inquiry into prostatectomy and the ultimate results of operation. Many did not contribute to this series because, as Dr. Schmidt put it, "If my case histories answered these questions I would write a paper of my own." Some others who did reply had evidently guessed at many of the questions to such an extent as would render the whole inquiry misleading if their cases were included. Therefore I take the work of thirty-four surgeons who give fairly good notes on 1,423 cases. These include my own. Many names will not be mentioned for various reasons.

Let us consider the errors in order to discuss their cause and the avoidance of them. In 1905, before this association, I read a paper publishing the fact that many surgeons had an average mortality of 20 per cent. in prostatectomy and only about 30 per cent. of good results. This paper was productive of great good, since Hugh Young in 1906 produced a splendid critical analysis of his cases in order to prove that when properly performed the mortality of prostatectomy is low and the results good. Even this monumental compilation has not accomplished all the missionary work necessary, as can be seen from the present series of cases. Young[1] sets forth the fact that when a prominent surgeon publishes a series of successful cases he incites many to try to imitate his success without proper instructions in his operation or understanding of the procedure or of the dangers to which he subjects his patient. The object of my paper ten years ago was largely to call to the attention of the surgical world the need of some method by which patients' lives or comfort may be safeguarded without injustice to any surgeon. In this present series about half the surgeons contributing, operating on more than half (820) of the 1,423 cases, are men of unquestioned training in prostatectomy by either the suprapubic or perineal routes. A comparison shows the mortality of the operation in the hands of these men to be less than 3 per cent. while in the hands of other surgeons of less experience in prostatectomy (although perhaps

* Read before the Section on Genito-Urinary Diseases at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

1. Young: Hypertrophy and Cancer of the Prostate, Baltimore, Johns Hopkins Press, 1906, p. 2.

equally or more skilful in other forms of surgery) it is 26 per cent. Now is it right in these modern days to sit smugly by without comment, while patients are sacrificed to the ambition of men unprepared to do this operation properly? I do not speak of novices or immature boys just out of the medical school, but of men undoubtedly able to be of great help to their patients in other ways but who are not sufficiently experienced in this operation. There are four excellent general surgeons contributing each a small number to this series who are the exceptions that prove the rule. These four men have had only a few cases of prostatectomy, but no mistakes or failures or even a justifiable death can be quoted against them. I believe this exception proves that there is nothing mysterious about good results in prostatectomy; that after proper diagnosis and a well-considered operation these results are obtainable by any really good surgeon by methods similar to those used in other major operations.

Let us consider for a moment the matter of diagnosis. In this critical analysis of a series of cases, methods of diagnosis can not be described in detail. It would seem unnecessary to call attention to the fact that a correct diagnosis is important before prostatectomy but evidently many otherwise careful surgeons consider the diagnosis of this condition so easy that they do nothing more than guess at the problem presented to them. Stricture of the urethra, spinal neuroses, condition of kidneys and other organs are frequently slighted or missed altogether in their examination. Even the most experienced operators occasionally overlook a case of prostatic or periprostatic cancer. In our present series, taking only the cases reported in which the surgeons have evidently tried to differentiate between hypertrophy and cancer, 7.3 per cent. of these patients were, in ultimate analysis, found to have cancer. This is a considerable percentage. It is worth reflection before operation.

Dr. A. says he operated in a case of cancer which proved very extensive. Result, urinary fistula which could not be closed before the patient died. It is possible that a thorough examination might have demonstrated this case to be inoperable and the patient had better have been left to die in peace. As a matter of diagnosis too, it is well to so examine patients that a wise choice of the suprapubic or perineal routes will facilitate the removal of the gland with best ultimate results. This is not the time or the place to open a discussion between the operators using exclusively the high or the low procedure. Many surgeons believe the high operation more suitable for one class of cases and the low for another. There is so much of the personal equation in this that universal agreement never will be possible. Watson of Boston attributes two deaths to "applying the perineal operation to very large prostates, one of them weighing 12, the other 10 ounces, after prolonging, by the effort, the operation, being forced to have recourse to the high operation and losing both patients from hemorrhage or shock, largely because of failure to choose the high operation in the first place." In a case of my own not long since the converse was true. The prostate was small but obstructing. The bladder contracted. In the suprapubic operation I accidentally opened the peritoneum and was finally obliged to have recourse to a perineal incision in order properly to enucleate the gland. Had I chosen the perineal route for this case in the first place no mistake would have occurred. This patient eventually recovered, but the operation was more severe than was necessary. L. Davis of Boston also reports to me having once accidentally opened the bowel in a suprapubic section. Possibly the patient had a small contracted bladder as mine just mentioned did.

In regard to the perineal operation it is only fair to note that a rough tearing-away operation, through a too small incision without much regard to the anatomy of the perineum, causes many absolutely unnecessary results such as rectal fistula and injury to the vesical sphincter producing incontinence. In our present series we note fourteen cases of rectal fistula and twenty-four of postoperative incontinence, all in perineal operations. I believe Young is right when he states that these mistakes are absolutely avoidable by doing an anatomically correct dissecting operation, under the guidance of the eye, and in absolutely condemning a blind manual enucleation of the prostate through a short perineal wound. Watson says, further, that "injury to the rectum is caused usually by pressure on the upper surface of the gland either when enucleating or when withdrawing it." In two cases in this series a rectal fistula was caused by passage of instruments, in one case a rectal tube and in another a urethral catheter. In this connection also one surgeon mentions a case of death from perforation of the sigmoid flexure by a rectal tube ten days after operation. These three accidents have nothing to do with prostatectomy, perineal or otherwise. Two cases of fatal hemorrhage, caused by passage of a rectal tube a day or two after suprapubic prostatectomy, present to us the danger of postoperative rectal instrumentation either for lavage or for the introduction of salt solution by the drip method.

In determining the probable chance of a patient before operation, perhaps the one most important examination is to ascertain the functional activity of the kidneys. This is unfortunately not so frequently done as it should be. Failure to do so accounts for the high mortality mentioned against the occasional prostatectomist and many general surgeons in this series. Uremia, so-called, after prostatectomy, should usually be labeled renal insufficiency. A sufficient number of tests of renal function should be made to indicate to the surgeon the gravity of the risk in each case. In cases in which absolute or even repeated retention of urine exists, the relief of operation should not be withheld because of the increased risk due to renal insufficiency, but a knowledge of the results of tests will warn the surgeon to safeguard renal function in every possible way. Dr. P. reports two patients dying of renal insufficiency within a few days after operation. This in spite of the fact that this surgeon is a skilful cystoscopist and might easily have ascertained the renal condition before operation, which he did not do. He says he has depended too much on clinical symptoms without a thorough cystoscopic and renal function examination before operation. Consequently his mortality was 30 per cent. Dr. L. had two deaths from uremia immediately after operation. He had not ascertained the functional activities of the kidneys. Some advocate two-stage operations although it has not been proved that a lower mortality results in consequence. Whether to operate immediately or to delay while medicinal and mechanical means are employed to improve the patient's general and renal

conditions or whether a preliminary drainage operation is indicated are matters of grave concern, allowing for exercise of rare judgment guided by experience. In this connection must be mentioned the choice of an anesthetic when the kidneys are insufficient. Spinal anesthesia is probably safest. Perhaps it is safest in every case, but certainly it is so in the presence of chronic nephritis. Examination of the heart, blood pressure and lungs from the point of view of the surgeon rather than from that of the physician will eliminate many deaths from "shock" and will materially aid in the choice of the anesthetic. It would be well if all bladders could be examined cystoscopically. Unfortunately this is not always possible. The age of the patient, his mental attitude toward the proposed operation and the size of the obstructing tumor often prevent such an examination.

There is a condition which leads to unsatisfactory postoperative results which may be cystoscopically discovered but is rarely even guessed at without cystoscopy. This is the existence of vesical diverticula. Several contributors to this series mention them as the cause of postoperative residual urine (amounting in a few cases to almost complete retention), and diverticula are frequently responsible for an incurable chronic cystitis with or without calculi. Some say they do not wish to include such cases in an analysis of postoperative results. They should be included, because, if the prostatectomy is undertaken with a full knowledge of the presence of a diverticulum, then the added risk of an unsatisfactory result is carefully considered in connection with the other features of the case, or if the diagnosis is so incomplete that the presence of a diverticulum is not known before operation, then both surgeon and patient have accepted the chance of operation admitting of failure if a faulty guess has been made. Dr. G. considers postoperative cystoscopy important for the purpose of detecting mucous-membrane flaps which may close the vesical outlet like a valve. Cystoscopy may be done advantageously through the wound. In suprapubic cases this is easy. In perineal ones the patient must be in the extreme Trendelenburg or knee-chest position.

Diabetes is a not infrequent complication observed before operation. From a statistical point of view one would not choose to perform prostatectomy in the diabetic. Unfortunately, urinary retention or hemorrhage or pain frequently forces the surgeon to accept the increased risk in order to save life in spite of the probable unsatisfactory end-result.

Squier[2] believes the average duration of life, after the habitual use of a catheter is begun, to be less than three years. We each probably have in mind many exceptions to this but for the sake of argument we must place some limit. If three years is the average then prostatectomy undoubtedly offers to the average sufferer an added period of comfort in his old age in spite of the fact that some will afterward complain of pain, partial retention or other symptoms almost or quite as troublesome as those for which the operation was undertaken. In the present series this number was only 19 per cent. in the whole series and very much less in the cases reported by the best prostatectomists. Probably skill, judgment and large experience reduce the number of unsatisfactory after-results to about 7 per cent. instead of 19 per cent. as in this series, or 30 per cent. in my series of ten years ago. One surgeon writes that he "supposed everyone had none but successful cases" except himself.

F. S. Watson writes me:

I am very glad to supply such information as my subsequent knowledge of my patients upon whom I have done prostatectomies permits. I lost sight of almost all the patients operated upon at the hospital relatively soon after they were discharged. Of the private patients who numbered about seventy I lost sight of a good many also. I cannot, therefore, regard the data I am sending you as at all complete. The same may be said of most of our surgical practice and that is the trouble with the statistical compilations of data concerning late results of our work. We do not know really just what proportion of ahem we can regard as actually cured in the strict sense of the word, or how many have suffered relapses, or failed to gain complete relief, etc. Hence the fallacies that are so often connected with statistical work. We rarely have the whole of any of our experiences, and knowing the whole might lead to very different conclusions.

M. Krotoszyner says:

It is to be assumed that patients in whom the result was not entirely satisfactory might have gone elsewhere for further treatment, and I cannot, therefore, give you data about these cases, but those whom I see off and on and whose whereabouts I am able to trace for years after the operation, are apparently well and without urinary disturbances.

Dr. W. writes:

Important mistakes resulting disastrously include two operations on patients in extremity. I would better have drained these cases through a ureter catheter passed into the bladder through a suprapubic troca cannula. Both died of uremia. The operation in both cases was short.

Dr. T. "wishes he had not operated upon a case of simple hypertrophy because the patient had frequency, pain and 8 oz. residual several years after operation." He also did prostatectomy in two unrecognized malignant cases. Both patients died within a few months.

Dr. X overlooked a diverticulum of the bladder. For this he later did a second suprapubic section on the same patient. He operated in one case of "atonic bladder" (etiology not stated) and in this case the patient still leads a catheter life.

Dr. B. says he considers prostatectomy ill advised in cases of known prostatic cancer. He had two such cases which he afterward wished he had not touched. Both patients died within two months after operation.

Dr. XY "used chromic catgut deep in perineal wound. Later an abscess formed which opened itself into the rectum. This urethro-rectal fistula never has closed."

It is generally a mistake to be in a hurry before, during or after operation. Insufficient preoperative preparation, inexact diagnosis, hasty judgment as to route or time to operate are only equaled as mistakes by too great haste during operation and lack of skilful care afterward. Prostatectomy, dealing as it usually does with unsound old men, to be successful should have every factor in its favor. The surgeon should be an experienced one and should carefully study his cases. The patient is best cared for in a well-equipped hospital and the operator should personally supervise the after-care of the patient, at least until he is up and about and has regained some of his strength. If these precautions before and after operation are followed the end-results will be generally satisfactory and the mortality low.

Journal Building.

2. Squier: Surg., Gynec. and Obst., October, 1913.

ABSTRACT OF DISCUSSION

Dr. Granville MacGowan, Los Angeles: It has been specifically emphasized on the medical profession that these operations must be performed rapidly. I am a reasonably slow operator yet I do not know of anyone who has a lower percentage of deaths than I have had. The percentage has been so low that I have been afraid to publish it. It is not often necessary to perform the operation of prostatectomy rapidly. One should take the time necessary to do what one intends to do thoroughly. The patient should be well prepared beforehand and well cared for afterward; then he will live and be comfortable. That is a point the essayist has brought out.

In every community are crippled old men who have been operated on rapidly for enlarged prostates without having their obstructions removed. Within the past three months I have seen two such people who were operated on in two of the very best clinics in America. They were operated on very rapidly but they still have their prostates. One paid $5,000 to have his removed but he has a beautiful intravesical growth, and lives a catheter life because he cannot get up courage to be operated on again.

Dr. A. B. Cecil, Los Angeles: The importance of ascertaining the function of the kidneys by the use of the phenolsulphonephthalein previous to operation, should be emphasized. I have used this test very extensively from the time it was first introduced and it undoubtedly gives in many cases data which cannot be obtained in any other way. I have heard the criticism that the excretion of phenolsulphonephthalein has been found to be relatively high and yet the patient died of uremia following prostatectomy, and that another recovered when the excretion of phenolsulphonephthalein was relatively low.

It must be remembered that phenolsulphonephthalein gives us only kidney efficiency but does not tell us how much work the kidneys have had to do. The patient with a low kidney efficiency may be better able to stand operation than a patient with a relatively higher efficiency, because by prolonged drainage, or because of low metabolism, he may not have retention of toxic products in the blood. So that not only must we determine the efficiency of the kidneys, but where this is low, retention should be suspected, and should be determined by cryoscopy or blood urea.

Dr. G. Shearman Peterkin, Seattle: I believe thoroughly in what Dr. Whiteside says. The important thing is that you should operate slowly. One of the advantages of operating slowly is found in spinal anesthesia. When you give a patient a spinal anesthetic it is going to last from three-quarters of an hour to an hour anyway, so what is the use in hurrying. You will not get any better results. You can take your time with spinal anesthesia in this operation when you cannot in other forms of anesthesia.

I want to speak of the diverticulum. In Seattle when we undertake these operations, after catheterizing the patient once, we inject a 2 per cent. silver iodid solution, then take a roentgenogram of the patient lying on his back, or best of all, lying on his stomach, with a tube up against the glutei. You will be surprised how many diverticulums you will see and how many bladder trabeculae you will see. It is even more advantageous than your cystoscopic examination, when you show your patient the diverticulum on the roentgenogram, because he knows then that you know what you are talking about and he is satisfied. If you simply tell him it is there, he may perhaps question your diagnostic ability.

Dr. L. W. Bremerman, Chicago: I think the two most important features in Dr. Whiteside's paper relative to the net results in prostatectomy are brought out in his remarks regarding the preliminary treatment and postoperative treatment. I think the operative procedure is the simplest part of the whole affair. I think most of us are too prone to see our patient today and operate tomorrow, without having made the proper functional tests, and how could it be otherwise than to expect that in a fairly large number of the cases the end-results will not be good. We should take our patients and study them carefully and get the general condition of the patient in proper shape for operation, and then proceed with the operation, and follow it with proper subsequent treatment, which may differ in the minds of many surgeons, but which should always be carried out to some extent. We are so ready to discharge our patients as cured when the abdominal wall heals up, and there is no leakage from the suprapubic or infrapubic wounds. We call our patients well. It is wise to keep those patients under observation for weeks, and discharge them from observation only when the bladder is clean.

The feature Dr. Peterkin brought out relative to a Roentgen-ray examination of his cases is an excellent one, and in all cases the genito-urinary surgeon should have the best possible means of diagnosis. I believe that the proper equipment of a genito-urinary surgeon's office today should include a Roentgen-ray apparatus, and every case should have roentgenograms incorporated as a part of the examination.

Dr. J. I. Butler, Tucson, Ariz.: To avoid, especially in the perineal method, a complication spoken of by Dr. Whiteside, that is, rectal fistula, I have been in the habit of employing the simple procedure of divulsing the sphincter ani as practically the first step of the operation. The object and result of thus relieving rectal pressure is obvious. I think this procedure valuable, and make the suggestion here because I have not seen it in print or in other clinics than the ones I have been connected with. It is carried out just as in hemorrhoid or fissure operations. Of course the levator ani muscle is also sectioned across in front. This permits the use of the Murphy drip in postoperative treatment.

Dr. Hiram R. Loux, Philadelphia: One point of interest in Dr. Whiteside's paper is the postoperative treatment by the drip method of irrigation. That method we have used in our clinic for quite a long time, and it occurred to us that the oozing which follows along the margin, or follows prostatectomy, is positively kept up persistently by the continuous irrigation. The question might be well discussed as to what advantage one really derives from the continuous irrigation. Recently, I talked with Dr. Young and I brought up the question. He told me that he was not irrigating as much as he did some years ago. I have found that the trouble from oozing proceeds for a period of eighteen to twenty-four hours following the removal of the prostates, and that by stopping the drip method of irrigation the clots properly form, instead of being washed away. This continual oozing causes a depression of the patient to some degree.

Dr. George S. Whiteside, Portland: In regard to Dr. Simpson's discussion, some of us who live in the far west do not have the advantage of the Johns Hopkins Hospital and urea blood tests convenient to our hand, and it seems to me that almost the same results can be obtained by the ptyalin test in the urine, and the Tycos blood pressure apparatus.

Dr. Peterkin has brought out a very valuable suggestion that I had entirely forgotten about. He told me about it before. Dr. Bremerman spoke of preoperative and postoperative treatment. It seems to me that is exactly why the real up-to-date genito-urinary surgeon has better results in prostatectomy, on the average, than the general surgeon; because of the fact that he does pay attention to preoperative treatment and postoperative treatment.

Dr. Bremerman is quite right. We should not lose sight of the patient too early. In this series of cases that I have quoted here a very large number of the men did not know whether their patients had residual urine two years afterward or not.

Dr. Butler spoke of rectal fistula and the stretching of the sphincter. Stretching the sphincter does not help in those cases in which the fistula is of mechanical origin, caused by punching through into the rectum at the time of the operation, either with the finger or with some instrument.

Dr. Loux spoke of a postoperative irrigation treatment. I may have misled him on that. I did not say that I did any irrigation after prostatectomy. I do not irrigate them at all for at least two weeks. Convalescence is more satisfactory without lavage than it used to be when frequent washing was the rule.

VERUMONTANITIS *

W. J. PENNOCK, A.B., M.D.
SPOKANE, WASH.

Symptoms ascribed to inflammation of the verumontanum were noted as early as 1839, when Baxter stated that many patients were seen suffering from frequency of urination and a violent throbbing or spasm on passing the last few drops of urine, and that he believed these symptoms to be due to an affection of the mucous membrane in and about the verumontanum.

The veru as an anatomic entity was not recognized by the anatomists, who gave hazy and inaccurate descriptions, Gray, for instance, stating that the verumontanum is a narrow longitudinal ridge formed by an elevation of the mucous membrane and its subjacent tissue — 8 lines in length by a line and a half in height. The sinus pocularis, he describes as a culdesac, one-fourth inch in length, projecting backward in the substance of the prostate behind the middle lobe. The erroneousness of this description was rendered evident with the advent of urethroscopy, but it remained for Rytina to demonstrate the actual gross and histologic anatomy of the gland.

Embryologically the veru is developed from the united lower ends of the atrophied müllerian ducts, which explains the origin of its glandular tissue, and it is in derivation homologous with the uterus and vagina.

Fig. 1.—Section through lower portion of sinus pocularis showing invaginating processes. From photomicrograph.

Rytina has differentiated the organ into a central glandular and a peripheral stromal portion, the glandular portion consisting of groups of glands showing numerous intra-acinous proliferations, and these infoldings are composed of several layers of epithelial cells, in type varying from columnar to squamous. The peripheral portion is made up of a fibrous-tissue stroma with an occasional glandular acinus and the organ is encapsulated at its base with dense bands of fibrous and elastic tissue. Much eleastic tissue was demonstrated in both peripheral and stromal portions.

PATHOLOGY

There may be simple hyperemia or an edema of the veru and the mucous membrane about and notably posterior to it. The veru may be evenly distended until it practically fills the lumen of the urethra, or smaller, with its surface showing small cysts or ulcerations. In pyogenic cases purulent material may protrude from between the swollen lips of the utricle and in these cases pus often is expressed from the orifices of the lateral lobe prostatic ducts in the prostatic sinuses on each side of the veru. In the acute cases, usually, the inflammation of the veru is only part of the general hyperemia and edema of the prostatic mucosa. In the chronic cases, the surrounding mucous membrane is nearly normal, while the veru is clearly defined, hypertrophied, firm, infiltrated and fibrotic. Michailoff reports cases of calculi protruding from the utricle. Microscopically, Rytina has studied only the infective type of verumontanitis. He finds the essential lesion in these cases to be a submucous and periacinous round-cell infiltration. He also demonstrated in serial sections the infection traveling the entire length of the sinus pocularis.

As I have not felt justified in removing the entire organ in any nonpyogenic case, I have not been able to get sections of the complete gland for examination. Specimens removed by rongeur in the line of treatment comprise necessarily only the hypertrophied upper portion, and show merely hypertrophic changes. It is desirable that we should have sections through the glandular portions to demonstrate if any adenomatous change is present.

ETIOLOGY

Infection by pyogenic organisms, while fairly frequent and probably a necessary concomitant of prostatitis and vesiculitis should not be emphasized as an etiologic factor, as the infection of the veru is less important than the infection of either prostate or vesicle, impossible to eradicate until the subjacent infection has terminated, and is liable to withdraw our attention from the more important noninfective cases. Neisserian infection is undoubtedly common and it is worth noting that the veru may become infected by a descending infection from a pyelitis without definite involvement of the bladder, and the patient's most distressing symptoms may be due to the verumontanitis.

There are many etiologic factors in the nonpyogenic cases.

1. Coitus interruptus is a fairly common cause. My records force me to believe the practice to be more general than we have thought and I now embody the question in all case histories. Obrowski believes we should regard as causative factors any deviation from the normal sexual act that provokes a rapid fall of the curve of orgasm, as by these the automatic reflex contraction of the dilated blood vessels is interrupted, preventing the normal return of the vessels to their collapsed condition of rest. The repeated disturbance of the normal curve causes a lowering of tone of the local blood vessels, resulting finally in their remaining in a state of semidilatation; the hyperemia thus induced being the first stage of inflammatory change. If these partially dilated and relaxed blood vessels are irritated by protracted repetition of the sexual act, a paresis of the vascular muscle results, and the unphysiologic overstimulation produces an eventual paresis of the spinal innervation center, the function of which is to change the condition of the vascular spaces from

* Read before the Section on Genito-Urinary Diseases at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

that of the maximal dilatation, intended for a short time, to the state of normal quiescent contraction.

2. Ungratified sexual desire, as exemplified by persons allowing their passions to be aroused by intimacies, while refraining from the sexual act, falls in the same class as coitus interruptus. The maximal dilatation of the blood vessels is maintained for a greater length of time and a longer relaxation and consequently a more pronounced stasis is produced.

3. Masturbation is so evidently unphysiologic that I simply mention it to call attention to the fact that after an inflammation has been produced by the practice, the continual irritation of the inflamed veru may make it almost impossible for the patient to break himself of the habit. I desire to emphasize the need of examination of the veru in all cases of onanism in the adult. Cole states that often masturbation is the cause rather than the result of verumontanitis.

SYMPTOMATOLOGY

The symptoms of verumontanitis may well be divided into those referable to the urinary and those referable to the genital systems, the individual case usually showing symptoms referable to only one system.

1. Urinary symptoms:

(a) Urinary frequency: This varies from urination every fifteen to thirty minutes, with a nearly constant interval desire to urinate, in the acute cases, to every one and one-half to two hours with no interval distress in the chronic cases, in which annoyance may be caused only by interrupted sleep.

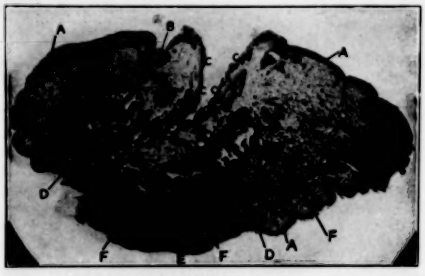

Fig. 2.—Section of normal verumontanum showing course and structure of sinus pocularis: *a*, mucous membrane; *b*, pit formation; *c*, sinus pocularis; *d*, central group of glands, some showing infoldings; *e*, duct; *f*, capsule; *g*, stroma. (After Rytina.)

(b) Urinary precipitancy.

(c) Burning sensation in the deep urethra, sometimes referred to the end of the penis. This may occur only for a few minutes following urination, may be constant or, quite often, may gradually increase during the urinary interval, forcing the patient to urinate in the endeavor to alleviate the sensation. I had one patient who had this symptom for a few hours each day, the remainder of the twenty-four hours his condition being entirely normal.

(d) Terminal tenesmus is present in the acute cases.

(e) Hematuria is present in the acute and subacute cases, varying from macroscopic blood in all three glasses — a few drops of blood extruded at the end of urination — to microscopic blood in the third glass.

(f) Pyuria is of course present in the pyogenic cases.

(g) Shreds of mucus embedding a few white and red blood cells are often noted in the nonpyogenic cases.

(h) Urinary obstruction or retention: Swinburne believes that inflammation of the veru induces spasmodic contraction of the compressor muscle, causing marked obstruction, and cites cases in which patients have difficulty in urinating, with residual urine as high as 16 ounces, in which the caliber of the urethra was normal and in which treatment of the inflamed verumontanum produced cure.

(i) Nocturnal enuresis occasionally occurs.

(j) There may also be mentioned an occasional symptom, dribbling of urine, a sensation of wetness in the urethra and a lack of the normal sensation at end of urination.

2. Genital symptoms:

(a) Diminution of sexual power ranging in degree from poor erection to absolute impotence. Michailoff believes the atonic form of impotence to be due entirely to a hyperemic stagnation in the region of the veru. Orbowski reports 310 cases of impotence in which the diagnosis of typical verumontanitis was made in 261. Of the 261 patients all but 16 were cured by treatment of the veru. Of the atypical cases more than half were not improved by treatment. He believes that in the 16 typical cases the lack of success was due to insufficient consideration of the secondary psychic manifestations. It must also be noted that a purely psychic impotence may develop, the patient presenting, also symptoms due to a demonstrable inflammation of the veru, prostatic urethra or trigon.

(b) Premature, usually, occasionally delayed, ejaculation.

(c) Painful ejaculation: This symptom is common in the acute and subacute cases and usually is evidenced by a sharp stabbing pain, often referred to the perineum, sacral or coccygeal region. In some cases there will only be a burning sensation in the deep urethra, persisting for some time after ejaculation. This burning sensation is probably due to the inflamed mucosa surrounding the veru, while the sharp pain is undoubtedly due to the sudden stretching of the ejaculatory ducts, the lumens of which are diminished in caliber by the round-cell infiltration in the surrounding tissue.

(d) Priapism is, I believe, rare, although the acute cases sometimes show increased erections due to the irritation of the nerve ends in the posterior urethra.

(e) Nocturnal emissions: These are due to the infiltration of the collicle, which produces a mechanical atrophy of the muscles of the ejaculatory ducts.

3. Other symptoms:

(a) Referred pain is common in these cases. Some of the patients complain of a dull ache in the suprapubic region, but a great many suffer from actual pain, in the lumbar region particularly. This pain is sharp, often severe and remittent in type. This is often the only symptom the patient complains of and an inflamed veru is undoubtedly the cause of many, so-called, lumbar myalgias and neuralgias. The pain may also be referred to the testicle, coccyx or rectum.

(b) The suprapubic pain is common only in the acute cases, in which, with the inflammation of the veru there is hyperemia of the mucosa posterior to it and of the trigon. A persistent, mucoid, urethral discharge is sometimes present. Many of these patients are so neurotic that their symptoms must be regarded as due both to the actual lesion and to psychic disturbance.

DIAGNOSIS

I do not feel that the symptoms present a symptom complex. As I have stated, the cases usually present either urinary or sexual symptoms exclusively and not the admixture of both that we would expect; therefore we must, in any case showing any of the symptoms, regard the veru as a possible causative factor until eliminated by examination. In a routine genitourinary examination, any undue sensitiveness in the prostatic urethra to the passage of bougies should arouse suspicion of verumontanitis.

In the urethroscopic diagnosis, examination of the verumontanum alone is not sufficient; the mucous membrane surrounding it must be examined carefully and if that is inflamed the trigone and bladder should be examined; the trigon and prostatic mucosa often being hyperemic, edematous and bullous in appearance. The straight tube of Young affords a better picture of the entire mucous membrane than the fenestrated curved tube, and facilitates treatment of the surrounding mucosa.

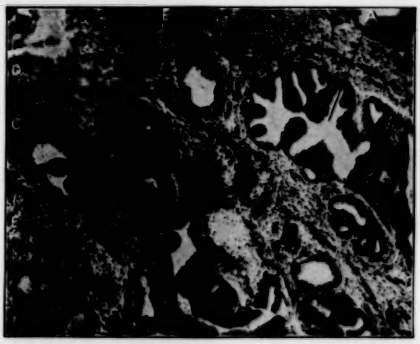

Fig. 3.—Section through an infected verumontanum. Infection is limited to left half; right half is normal: *a*, normal acinus showing infoldings, suggests prostatic hypertrophy; *b*, normal stroma; *c*, peri-acinous infiltration with round cells; *d*, normal acinus replaced by round-cell infiltration; *e*, infected stroma. (After Rytina.)

Diagnosis of inflammation of the veru should be made only after thorough examination of the prostate and vesicles and elimination of pathologic conditions of the kidney and bladder. The urethroscopic examination should not be made until after any irritation induced by the passage of bougies or instruments has subsided, as, otherwise, oozing of blood may obstruct clear vision. The passage of the urethroscope should not cause hemorrhage from a normal veru, and the presence of any bleeding, I feel, evidences pathologic change.

TREATMENT

In the pyogenic cases, emphasis must be laid on termination of infective processes in the prostate and vesicle, and treatment by injection of the sinus pocularis, while valuable, necessarily is only an adjunct in cases in which its infection resists the treatment directed to the prostate. In the acute nonpyogenic cases, treatment must be directed to the inflamed mucous membrane as well as the veru. I have seen several cases in which the mucosa of the prostatic urethra was so hyperemic and edematous that it was impossible at first clearly to outline the veru, but after one or two applications of a 5 to 10 per cent. silver nitrate solution to the mucous membrane, its condition returned to normal; the veru became well defined and the application of a strong silver nitrate solution to the veru itself cleared up the case. In the acute cases the local application of the weaker silver nitrate solution to all the inflamed mucosa of the prostatic urethra gives decided relief from the symptoms, which we must remember are not ascribable to the veru alone.

In the subacute cases I use 20 per cent. silver nitrate in those showing a soft, somewhat cystic veru, fused silver nitrate when the veru is larger and firmer, and confine the application to the veru alone. In these cases I neutralize the silver nitrate with sodium chlorid before removing the tube. In the chronic cases, I amputate the hypertrophied portion and apply fused silver nitrate. Hawkins states that if a little oil is left in the urethra after the application of the silver that the patient suffers much less. He uses eucalyptus 1 part, charcoal-filtered cylinder oil 7 parts.

The possibility of epididymitis developing during treatment must be considered even in nonvenereal cases. I have had cases develop several days after applying silver nitrate to the veru, and without other etiologic factor. I find that the treatment, particularly of the chronic cases, requires a great deal of tact. There is so much of the neurotic element in many of these men that the local condition must not alone be considered, and particularly if there is diminution of sexual power, the patient requires an optimistic prognosis and general tonic treatment. If this is neglected, the patient will not be cured even if the veru is restored to normal. Inflammation of the veru is also the basic factor in many neurotic and neurasthenic cases, as the neurologists are now recognizing. Gardner reports one patient who was committed to a state hospital for the insane because it was thought the patient imagined a pain in the neck of the bladder; the case clearing up on treatment of the veru.

As soon as the veru is normal in appearance, even if the patient still complains of symptoms, I stop all treatment, assure him that he will recover completely, advise him against worrying over his condition, make him take plenty of outdoor exercise and above all emphasize the fact of his eventual recovery.

REPORT OF CASES

CASE 1.—A painter, married, aged 43. He denies venereal disease. During the last year he has had a feeling of irritation at the neck of the bladder, particularly when working. Urinary interval, two hours. He has a constant interval desire to urinate. Urination is not painful. There is no tenesmus or blood. The sexual act is normal. Genitals, urine, prostate, vas and vesicles are normal. A bougie causes pain in the prostatic urethra. The verumontanum is large, dark red and very tender. Silver nitrate stick applied three times gave entire relief from symptoms.

CASE 2.—A bookkeeper, married, aged 25. He denies venereal disease. Three and one-half years ago he developed

pain and irritation at the neck of the bladder. The condition had persisted and become gradually worse. He urinates every one to one and one-half hours. For three hours every day the patient feels normal; the remainder of the time he has a constant desire to urinate. He has a slight burning sensation in the deep urethra. The urine occasionally has shown white and red blood cells, but no bacteria. The verumontanum is twice normal size and very sensitive to pressure. The silver nitrate stick was applied. The first treatment gave relief from symptoms for eight days. In all, the patient was treated five times, improving after each treatment, but noticing some recurrence of symptoms after each treatment but the last. Four months after the last treatment the patient reported himself free from symptoms.

CASE 3.—An accountant, married, aged 33. Patient had gonorrhea ten years ago and a symptomatic cure in three months; complains of pain in coccyx, particularly at night. He has loss of normal sensation during the sexual act. Urination is normal and painless, the urine negative. Genitals, prostate, etc., are normal. The verumontanum is inflamed, bleeding on touch, with a bleb on the left margin. Applied silver nitrate 20 per cent. once and 10 per cent. once. Four months later the patient reported himself free from coccygeal pains. Sexual powers and sensation are normal.

CASE 4.—A porter, married, aged 24. The patient denies syphilis but had gonorhea five years ago, which persisted for several months. Urination interval is normal and painless. He has loss of sexual sensation. For some time he has had severe pain in the lumbar region, both sides. This pain is severe enough to make him seek treatment. The urine is negative. Examination revealed nothing but the severe pain produced by a bougie in the prostatic urethra. The verumontanum is intensely inflamed, filling the end of the urethroscope. Applied silver nitrate 20 per cent. Backache ceased the day following the treatment, but returned ten days later. Silver nitrate stick applied five times gave entire relief from symptoms.

CASE 5.—A mason, unmarried, aged 20. Patient denies venereal disease. One year ago he developed great frequency of urination with severe burning along the course of the urethra with severe tenesmus and terminal hematuria. Cystoscopy at that time revealed a normal bladder. He made a gradual improvement, leaving the hospital in three weeks. The symptoms did not entirely leave and, becoming severe again, the patient was in the hospital for two weeks, gradually improved and was free from symptoms for eleven months. The present attack came on suddenly. He urinates every thirty minutes day and night. The third glass is red with blood; urine negative except for red blood cells. Urinary and sexual organs are normal. Cystoscopy shows bladder mucous membrane normal; the trigon slightly edematous, not inflamed. The kidneys were catheterized. Urine was negative. The verumontanum was larger than normal, soft, and did not bleed on pressure. The silver nitrate stick was applied. The patient immediately improved after the application of silver nitrate, leaving the hospital five days later. Silver nitrate was applied three times at ten-day intervals until the verumontanum was reduced to normal size. Two months later the patient reported himself perfectly well.

CASE 6.—A mechanic, married, aged 34. The patient denies venereal disease. July, 1914, he had a urethral discharge, which has persisted. The discharge is slight and contains a few intracellular diplococci. The prostate on the left side is hard and distended. The prostatic secretion shows 75 white blood cells to the field. The patient came under observation Oct. 10, 1914. Urination interval is one hour; nocturia, 8. There is severe tenesmus. Sometimes the patient has passed a little blood with the urine.

Octo. 28, 1914: Patient urinates every fifteen minutes, the urine showing blood. There is constant burning and tenesmus. Cystoscopy negative, with the exception of congested trigon. The kidneys were catheterized, the urine was negative.

October 30: Endoscopy revealed a swollen, distended veru. The silver nitrate stick was applied. Six days after treatment the patient showed much improvement, with urination every two hours. Nocturia was 0 and patient had very little discomfort. He immediately began gaining weight and strength. Silver nitrate was applied twice subsequently and when seen December 19 the patient was feeling well. Urinary interval two and one-half hours; nocturia, 0 and 1; urine, negative.

April 10, 1915: Urethroscopy revealed a normal verumontanum and patient free from symptoms.

CASE 7.—A clerk, unmarried, aged 23. The patient denies venereal disease. Has practiced masturbation sixteen years. The genitals are normal. The passage of sounds caused severe pain in the prostatic urethra. The verumontanum is swollen, edematous, bleeding easily. Silver nitrate 20 per cent. was applied three times until verumontanum became normal. The patient had no difficulty in breaking himself of the habit as the irritability which caused the desire left him with the improvement in his condition.

CASE 8.—A farmer, unmarried, aged 18. The patient denies venereal disease. He has bladder distress, frequency of urination and pronounced tenesmus. The genitals are normal. Urine, all three glasses are cloudy with pus cells, the third containing a few red blood cells. The urine from the right kidney is negative; urine from the left kidney containing pus cells, but no bacteria. Cultures and inoculations were negative. The bladder showed chronic cystitis. The verumontanum is swollen, very edematous, bleeding on touch, practically filling the urethra. Treatment of the verumontanum gave the patient practically complete relief from his symptoms. Urination became painless and at regular intervals, the pus remaining, however, in the urine, until the pyelitis was cleared up by lavage.

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ABSTRACT OF DISCUSSION

DR. EDGAR G. BALLENGER, Atlanta, Ga.: I have recently made it a little easier to apply these treatments by a slight modification of the endoscope. I had one made with rounded edges so that it could be introduced without an obturator. The observation may be made as the instrument passes in and the verumontanum is more easily found. Patients suffering from verumontanitis are very sensitive in that portion of their anatomy and greatly appreciate gentleness and speed in these treatments. By using this endoscope the passage of urine into the instrument causes considerable less annoyance than with the usual endoscope.

DR. W. J. PENNOCK, Spokane, Wash.: I was glad to hear Dr. Ballenger's suggestion with regard to the instrument. I am not quite satisfied with our instruments at the present time, and I am very glad that Dr. Ballenger has found something better. There is no question about the necessity of giving these patients as little pain as possible, as the treatment must necessarily be administered more than once and the patient is not usually very glad to come back to you. I go into the bladder with the endoscope and then draw the endoscope forward, feeling that it is quite important to make a careful study of the mucous membrane of the prostatic urethra.

Iron Bacteria.—It has been known for many years, says E. C. Harder, (*Science*, Sept. 3, 1915, p. 310) that some of the higher bacteria are concerned in the precipitation of ferric hydroxid from iron-bearing waters. Thus, in city water pipes the frequent turbidity of water containing a small percentage of iron and the occasional filling of the pipes with ferric hydroxid has been attributed to *Crenothrix polyspora*. Other forms have been found abundantly present in surface iron-bearing waters, and it has been asserted that such bacteria play an important part in the formation of numerous small deposits of bog iron ore. Harder thinks it possible that they may also be in part responsible for extensive beds of sedimentary iron ore. In a field study of the subject, Harder has found iron bacteria present in almost all iron-bearing waters, both surface and underground, including the workings of mines to a depth of several hundred feet. The last-mentioned fact, Harder thinks, suggests the possibility that certain underground deposits of iron ore have been formed by these bacteria.

THE VALUE OF THE COMBINATION METHOD IN THE TREATMENT OF CERVICAL CARCINOMA

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Although it has been known for centuries that cancer is peculiarly susceptible to heat, its application was not established on an intelligent basis until Percy, in 1912, experimentally proved that cancer cells would be destroyed when exposed to a temperature of 113 F. for twenty minutes, and, further, that the normal tissue would live in a temperature as high as 131.9 F.

With this as a fundamental principle, he worked out a scheme by which heat could be applied to cervical carcinoma on a far more elaborate scale than had ever heretofore been possible. Up to this time we had been trying to realize the same brilliant results accomplished by Byrne of Brooklyn, but he left no definite technical plan to follow. Each worker groped along independent lines. There was no definite knowledge of the physical effect of heat on cancer cells, and consequently individual efforts ended in gross disappointment.

The perfection of this elaborate heat method marks a brilliant epoch in the cancer problem. Though possessing many admirable qualities, it does not seem to me, when viewed in the light of a cure, that it is a method to be *singly used*. It should be classed as a *valuable adjunct*, and its chief virtues are to be witnessed when combined with other equally valuable but operative methods.

In my first cases the hot irons were used only in advanced inoperable cases. Certain of these women showed such noted improvement, both locally and constitutionally, that it was disappointing to realize that their condition was only temporary. When the slough would detach, the bleeding stop, and the toxemia diminish, these desiccated, cadaverous individuals would be transformed into a state of apparent health. As a result of the stimulation through these initial encouraging results, the use of the method was broadened and was found to be admirably adapted to transforming cases less advanced, though still inoperable, into safely operable risks.

Two of our first advanced cases had severe hemorrhages following the detachment of the slough. In one instance, the hemorrhage proved fatal, and in the other was controlled by packing.

With the hand in the abdomen to control the degree of heat, both internal iliacs and one ovarian were ligated for the special purpose of coping with this serious complication. This step splendidly accomplished the desired end, since we have had no secondary hemorrhage within six months after its application. Though this preliminary ligation was done primarily to control secondary hemorrhage, its evolution has taught me that it possesses other commendable points.

In this extensive ligation, twenty-five arterial trunks are shut off, the uterus receives only a limited supply of blood through the one ovarian, and as shown by Dawbarn, the resulting starvation produces a marked retarding influence over the growth. Second, while the iliacs are being tied, the angle of the bifurcation of the common iliac can be explored for lymphatics, which, when removed, are a valuable prognostic guide as to the advisability and wisdom of further subsequent radical operation. Third, as a preliminary hemostatic for primary or later Wertheim removal, it notably controls operative hemorrhage. Last, as a result of these ligations, the slough seemingly detaches sooner, and the vault of the vagina clears more rapidly.

Fig. 1.—The right infundibulopelvic ligament put on stretch, bringing ovarian vessels into view. Mayo scissors in peritoneal nick at bifurcation of common iliac.

For purposes of discussion, cervical carcinoma may be conveniently divided into the following groups:

Group 1: Incipient cases. Ulceration strictly limited to cervix. Free mobility. No infiltration. Occasional unaccountable show. Menses slightly prolonged. Constitutionally unimpaired.

Group 2: Cervix well infiltrated with carcinoma. Growth just beginning to spread to vaginal walls. Uterus still movable, though there is a definite thickening in its lower and middle segment. No appreciable lateral infiltration. No pain in sides. Having copious bleeding. Secondary anemia and constitutionally below par. The type in which the radical operation is reluctantly considered from the standpoints both of primary mortality and of permanent cure.

Group 3: Either a crater or large cauliflower mass in vault of vagina. Notable lateral infiltration as well as involvement of vaginal wall at least an inch from cervix. Decided impairment of mobility. Pain in sides. Marked cachexia and anemia. Constitutionally and locally surgically impossible from radical standpoint.

Fig. 2.—Bifurcation of common iliac with ureter attached to inner peritoneal flap and lymph gland being removed.

Fig. 3.—Ligation of internal iliac. Not necessary to open sheath. By lifting exposed vessel with forceps, needle can be passed without danger of injury to underlying vein.

Group 4: Hopelessly advanced. Conglomerate metastases of rectum, bladder and vagina. Inguinal lymphatics involved. Constant losing with foul odor. Constitutionally wrecked. Opium habitués.

FIRST GROUP

Cases falling in the first group are treated by combining at the one sitting the application of heat with the Wertheim removal. The abdomen is opened, thoroughly packed off, and as a prophylactic hemostatic measure, both internal iliacs are ligated, which excellently serves in reducing bleeding so frequently associated with the radical work.

The hot iron is now applied for twenty minutes, the hand being used within the abdomen as a guide to the position and degree of heat of the cautery. Heat is used here to destroy cancer cells, in the belief that the risk of grafting cancer through manipulation is thereby diminished; further, it aids in sterilizing the vaginal vault. Iodin is liberally applied to the vaginal canal, and the radical work immediately follows.

Where there exist no physical contraindications, the combination of these two valuable measures gives the best chance for permanent cure. I have seen fairly early cases in good physical condition treated only by the cautery, in which in six or eight months there would be a return of the disease at the site of the former burning. To follow the heat with radical removal unquestionably gives a better end-result. The heat adds not more than twenty-five minutes to the sitting, and with a good surgical risk, it is not too taxing to perform the Wertheim removal immediately afterward.

In extremely obese women of small stature, it is a physical impossibility to operate radically; furthermore, if it were possible, the primary mortality would be so high as to render the procedure unwise. Here the liberal application of heat offers the best and only chance, as these patients are unfit for the extensive operating, and yet can well withstand the abdominal incision for the introduction of the guiding hand.

SECOND GROUP

In the second group, the Percy method occupies a unique position in that it *converts* the constitutionally unfit into good surgical risks, and too, causes marked shrinkage in the local area. By employing it in combination with ligation of both internal iliacs and one ovarian at the first sitting, with a three and a half weeks' interval, these surgically doubtful risks are literally transformed into safely operable cases.

This procedure produces little or no shock; in fact, it is striking to see how readily these poor risks tolerate this first sitting. The plan adopted is to cook and ligate, and then let the patient remain in bed about ten days, at which time the slough detaches. The hemorrhage and toxemia having been controlled, the patient is permitted to return home and ordered daily douches and forced feeding.

Fig. 4.—Line of dashes shows line of incision, should it be found necessary to reflect sigmoid to reach bifurcation of common iliac. Not as yet found necessary.

From three to five weeks after this first sitting, the picture has changed, the hemoglobin has risen from 15 to 25 per cent., the vessels are full, the entire econ-

omy has steadily improved and from being a questionable surgical undertaking, the case is lifted both locally and constitutionally into a frankly operable state.

Fig. 5.—Peritoneal rents closed with continuous whip-stretch, full curved, round needle. Right ovarian artery tied.

Prior to my experience with the heat method, I can vividly recall certain patients who were clearly operable from a local standpoint, but who were notably depleted from hemorrhage, and after the major extirpation, simply did not have sufficient reserve force to get well. They would gradually lose ground and die on about the tenth day from no apparent cause, except exhaustion.

By the use of this two-stage plan, such cases can be radically improved, and I feel that it can be positively asserted that it is a method which *increases* the *operability* of cervical cancer, as well as *reduces* its *primary mortality*.

THIRD GROUP

The third group of cases has heretofore been considered hopeless. The patients would as a rule be superficially singed, and sent home to die. Since employing the elaborate heat plan as a routine in combination with internal iliac and one ovarian ligation, I feel that, though permanent relief is not as a rule to be expected, still much genuine comfort and *some* cures can be given this group.

Pathologists have taught us that it is not possible to tell from the macroscopic appearance of a cervical cancer just to what extent it has metastasized. The pathologist of the Cancer Hospital at London held routine necropsies in 100 unoperated cases with death of cancer, and found that in 46 per cent. of these cases, the lymphatics were not involved beyond the pelvis, and from the side of lymphatic invasion, these cases were curable from an operative standpoint. Even though we accept these flattering statistics with some reserve, it gives a reasonable basis for a cure in some advanced cases, and further explains some of the sporadic cures with the old zinc chlorid treatment.

The same combination plan is adopted in this group. While in the abdomen, the infiltration is specially studied with a view to possible removal, and also while ligating the iliacs the lymphatics are removed to be later sectioned for metastasis. If the infiltration is too extensive, or if the iliac glands are metastasized, the case is abandoned as a hope for radical cure. On the other hand, if the glands are negative and the large mass is believed to be partly due to a chronic infection, the woman is allowed to transform and subsequently is given the benefit of a radical operation.

In my list I have had two cases which, when first seen, were obviously inoperable, but after the use of the combination method, they changed so completely that the Wertheim operation was performed.

Much to my surprise, even after very careful search, no cancer cells could be found in either of these specimens. Though carefully feeling my way in this group, and not having as yet formulated a positive conclusion, my results thus far have been sufficiently encouraging to warrant further study. Where the condition is so aggravated as to prohibit radical surgery, the ligation and heat give great temporary relief.

Fig. 6.—Ovarian artery tied and peritoneum closed over ligated internal iliacs. Hand grasping uterus with fingers extending down around basal structures to guide Percy cautery and control heat. Cautery schematically shown embedded in lower half of uterus—inserted by vagina.

In two of these advanced cases in which such noted improvement followed the combined method, the uterus having greatly increased in mobility, as well as a general shrinkage of the tumor mass having occurred, I thought it possible to perform the Wertheim operation. But when this was attempted, it was found as a result of the heat destruction that the upper two thirds of the uterus, when liberated, parted from the mass in the vaginal vault, thus rendering further radical procedure unwise, but still giving an opportunity to apply the heat to this remaining area through the abdominal route. Where the mobility of the uterus is solely employed as a guide to operability in these advanced cases, one will necessarily encounter this disappointing experience in a certain number of cases.

Fig. 7.—Gelpi's water-cooled speculum introduced into the vagina, bringing into view an external cervical carcinoma.

It is in the third group that the vesicovaginal fistulas are encountered. Five such complications have resulted in my cases. After the destruction of the initial mass and entire cervix, there remains a huge crater with suspicious nodular areas demanding further cauterization. Since the upper boundary of this cavity is the bladder itself, it is almost impossible to avoid damaging its wall in subsequent heat application. In order to overcome this feature, we are devising an accessory water-cooled speculum like a flat spoon to fit underneath this exposed vulnerable area.

Unfortunately, the third group is a very large one. In it are found some of our most interesting problems, and though further study is necessary before positive conclusion can be deducted, still it presents a field in which much can be done.

Permanent cures are not, as a rule, to be expected; but in view of my experience with this combination method, I feel that these patients should be more painstakingly studied and not, after the most superficial consideration, as is the usual custom, be relegated to the life of a morphin habitué. Thus far, through the use of this method, it can be stated that some surprisingly satisfactory results have been realized. In the majority, not only has there been given marked comfort, but a definite extension of life; and further, in a certain small number, there has apparently been given a cure.

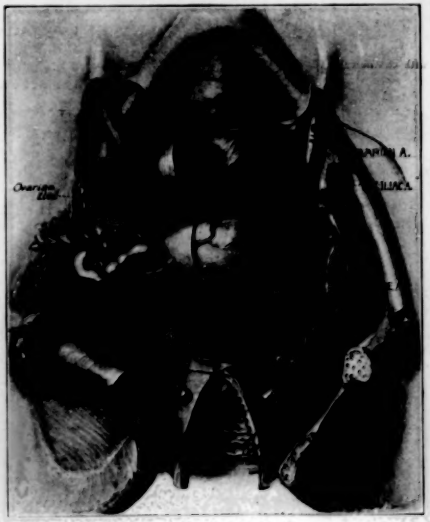

Fig. 8.—Semischematic figure showing uterine arterial collateral circulation via ovarian. Left internal iliac ligated, and right ovarian tied through peritoneum.

FOURTH GROUP

The fourth group is the absolutely hopeless class. From early experience, I have learned that more harm than good follows any attempt toward local interference. It is to be hoped that, as a result of improved medical education, combined with the educational work now being so splendidly conducted by the Cancer Commission, this group will greatly diminish.

Last December, I presented a preliminary report of this work to the Southern Surgical and Gynecological Association, at which time I discussed the heat technic. Since this time, the only radical change in method has been the addition of extensive arterial ligation. This communication was based on the observation of twenty-five cases; the number has now increased to forty-two. While it would be most desirable to submit at this time a detail analysis of each case with end-results, this would not be feasible, since the work is still in its infancy. However, since the use of this combination method, it can be stated that there has not been a single primary death following the ligation and heating, or from the Wertheim removal.

Five years will have to elapse before end-results can be reasonably computed, but my experience with this plan of attack has so completely surpassed former methods of treatment, that I feel fully justified in presenting at this time the subject for discussion.

SUMMARY

1. The heat method alone has doubtful curative properties, and should be viewed in the light of a valuable adjunct in the treatment of cervical car-

cinoma. However, in extremely obese women, it offers the best and only chance for a permanent cure.

2. Heat should be used as a routine in all types of cervical carcinoma, except in hopelessly advanced cases (Group 4).

3. The ligation of both internal iliacs and one ovarian possesses definite merit, and when combined with heat, furnishes the best means of converting the borderline cases into frankly operable ones.

4. It cannot be too strongly emphasized that the combined application of heat and ligation of vessels, on the one hand, and total extirpation, on the other, in all except clearly operable cases, should be done as a two-stage operation.

5. In the combination of heat with starvation, we have a valuable means of markedly increasing the operability and of decreasing the primary mortality of radical extirpation.

6. Heat combined with extensive arterial ligation, followed by radical hysterectomy, offers the greatest possibilities for permanent cure.

GUINEA-WORM DISEASE

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The occurrence of a parasitic disease, which is spread by drinking water, and found in an army force, in a country generally free from these parasites, seems of sufficient interest and importance to warrant a rather extended study of the case. Dracontiasis or guinea-worm disease occurs frequently in Africa and East India. It is rare in the United States, only a few cases having been reported, and these are mostly imported, although Van Harlingen's case occurred in a man who had always lived in Philadelphia.

In man, the female worm develops in the subcutaneous and intermuscular connective tisue and produces vesicles and abscesses.

Fig. 1.—Guinea-worm being gently drawn from the subcutaneous tissue of the left foot.

The parasites are generally found in the lower extremities. Of 181 cases, 124 occurred in the feet, thirty-three in the leg, and eleven in the thigh. The worm is usually solitary, although six or more have been present in the same patient. The worm is cylindrical in form, 2 mm. in diameter, and from 50 to 80 cm. in length.

The parasite gains entrance through the stomach and not through the skin, as is usually supposed. The male and female are ingested. The former dies and is discharged, but the latter after impregnation penetrates the intestines and attains full growth in the subcutaneous tissue, where it remains for a considerable time and may be palpated beneath the skin, feeling like a nest of worms.

The worm, in its endeavor to rid itself of its large number of living embryos, burrows head first downward, until it reaches the foot or ankle, where the head, penetrating the skin, causes a vesicle in the epidermis, which ruptures and results in an ulcer, through which the head projects. After the distended uterus ruptures, and the embryos are cast off in a whitish fluid, the worm generally leaves the host. These embryos contaminate the water, and develop in the cyclops, a small crustacean, and it is likely that man is infected by drinking the water containing these developed larvae.

The history of our case is as follows:

Lance-Corporal D. L., Second Cameron Highlanders, Company D, has seen service seven and a half years, five of which he spent in India. Since October, 1914, he has been at the front in France. Before he entered the service, he was a blacksmith in Glasgow, Scotland.

Patient states that while swimming in the rear of the trenches, six weeks before, he was injured by a barbed wire, receiving slight flesh wounds of the left foot, below the internal malleolus, and of the right foot on the dorsal surface. He believed the wounds insignificant at the time, and painted both wounds with tincture of iodin, applied no dressings, and continued on duty. In two weeks the wounds were almost completely healed, but in the course of another week, the left foot became tender, swollen, and finally suppurated. The inguinal glands on that side also became swollen and painful. He does not know whether he had any fever or not. At this time he reported to his regimental surgeon, who opened the wound and applied wet dressings. The wound partially healed, after which he went to the trenches for seven days, and again his foot became swollen and tender. This time he was sent to the clearing hospital, where it was again opened, and, following which he arrived at this hospital.

The patient states that coincidently with the primary injury he noticed a white, raised area on the flexor surface of the left forearm. A member of his regiment who had served with him in India broke the vesicle and removed a worm, by carefully wrapping it around a lead pencil. It was 2 feet in length. The wound closed and is now the site of a small pigmented scar. In regard to the patient's previous history, he stated that he did not remember having had any of the diseases of childhood, but had suffered from a severe attack of tonsillitis in 1911. He denies any venereal history. During his five years' service in India, he enjoyed good health, except for an occasional chill, followed by sweats and rise in temperature. These attacks persisted in spite of prophylactic doses of quinin taken twice weekly. All the water he drank while in India had been previously chlorinated. His family history is negative.

Examination of the wounds on the median aspect of the left foot, below the internal malleolus, showed a large, infected, irregularly shaped ulcer, about the size of a silver 25-cent piece. Its ragged necrotic edges were undermined for a variable distance of from 2 to 4 cm., and several sinuses extended upward and exuded pus, and sanguinopurulent material. The base of the ulcer consisted of unhealthy and uneven granulations. The region about the

wound and half way up the leg was quite tender. The inguinal glands on this side were enlarged and painful.

On the lateral aspect of the dorsal surface of the right foot was a small abrasion surrounded by an inflamed zone, which was also tender. The inguinal glands on this side were enlarged, but not very tender. Aside from local findings, the patient had a marked chronic pharyngitis, and acne vulgaris of chest and back. His chest and lungs were negative. Abdomen was tympanitic and somewhat distended, but no areas of tenderness were present. The spleen was not palpable. Liver, which was palpable, came just below costal margin. Reflexes were normal, and genitalia showed no scars. Blood examination showed: hemoglobin, 85 per cent., red blood corpuscles, 5,000,000; white blood corpuscles, 10,000; differential count: polymorphonuclears, 54 per cent.; lymphocytes, 36 per cent.; eosinophils, 10 per cent. The urinalysis revealed the specific gravity of the urine as 1.024; slightly acid, no bile, albumin or sugar.

Under ether anesthesia, the feet having been rendered bloodless by a Martin constrictor, both lesions were opened. In the left foot about 3 c.c. of pus were found. Culture from this was made and later showed *Staphylococcus pyogenes albus* and *Streptococcus pyogenes*. When the necrotic subcutaneous tissue was being dissected, a long tortuous, cylindrical organism was noted, which could by gentle traction be partially dislodged from its bed. By too great or sudden traction the organism would break, but another coil could be found in the tissue, and again traction applied. One organism was removed in toto. It was impossible to judge the number of worms in this foot, as it was difficult to decide whether several parts of one or of more than one worm were removed. There were certainly at least two, as one entire worm was removed.

Fig. 2.—Necrotic tissue, and site of lesion on lateral aspect of right foot.

The conditions in the right foot were quite similar, but no worm was removed in toto. The report from the pathologist, Dr. R. L. Thompson, was as follows:

"Specimen consists of several white stringlike parasites, varying in length, and tough in consistency. One of these seems to be a complete worm. The others are fragments of other similar worms. The complete worm measured 32 cm. in length by 3 mm. in circumference. The body is round, semitransparent, and filled with numerous small, milky, white bodies (embryos). The end of the worm tapers to asharp point, which is slightly curved at the extreme tip. Diagnosis (by Sir William Leishman) *Dracunculus medinensis*, or guinea-worm."

As this patient has recently returned from India, and as no other cases of guinea-worm disease have occurred in this vicinity, it is reasonable to suppose that this patient was infected in India, and that he has imported the disease.

The statement of the patient that the original lesion dated from an injury by barbed wire, and the occurrence of the worm at the site of the injury are worthy of note. Whether the worm was really the etiologic factor in producing the lesion, or whether it was attracted to the site of injury, is of course a question.

It seems that the removal of this worm may be effected better by prolonged traction, that is, wrapping the worm around an instrument and not allowing it to retract, than by operative procedure — endeavoring to excise the worm — as it may be divided and portions with embryos may remain and cause trouble later. The secondary pus infection should, of course, be treated by the usual surgical procedure.

A CASE OF CONGENITAL PERINEAL TESTICLE

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The infrequency of congenital perineal testicle is best shown by the report of Grégan (Montpellier, 1913), who collected records of eighty-three cases up to the year 1913, but did not state what proportion of these were congenital, since this type is by far the more uncommon.

The literature dating from this time contains reports of three cases of perineal testicle, two of which were of the traumatic variety (Bevan, A. D.: The Surgical Treatment of Undescended Testicle, THE JOURNAL, Sept. 19, 1903, p. 718. Mulligan, R. A.: *Proc. Roy. Soc. Med.*, London, 1912-1913, vi. Simpson, J. S.: *Med. and Surg. Rep., Episc. Hosp.*, Philadelphia, 1914, ii).

I wish to report another case of the rarer type: the congenital form of perineal testicle.

The patient, a boy of 12, had complained for the past six months of pain in the perineal region when in the sitting posture, especially when suddenly arising and on running. The pain was described as dull and aching and recently increasing in intensity. His mother stated that when the boy remained seated he would constantly change his position, shifting from one gluteal region to the other. Examination showed that the patient was somewhat undersized but mentally normal. The right side of the scrotum was atrophied, and the left testicle was found normal in all respects. The perineal region showed an oval body which measured about 2.5 by 1.5 cm., located 5 cm. anterior to the anus and 2 cm. to the right of the median raphé. The mass gave a testicular sensation on pressure, and could be easily manipulated from the area just anterior to the anus to the region of the right external abdominal ring, but could not be placed into the scrotum. The mother then volunteered the information that the absence of the right testicle had been noted about two weeks after the child's birth, but that no further attention had been given to it.

At operation (Beck) an incision about 5 cm. long was made over the right external abdominal ring. The cord was seen emerging from the ring and extending down to the ectopic perineal testis. Attached to the lower pole of the testicle was a strong fibrous band, the gubernaculum testis, which was attached 2 cm. anterior to the anus and about the same distance from the median raphé. The gubernaculum was excised from the testis just below its attachment, and the somewhat underdeveloped testicle placed into the scrotum in the usual manner. The recovery was perfect, the patient leaving the hospital on the eighth day.

Four weeks later, the testicle remained in normal location and seemed normal in all respects.

SARCOMATOUS PROLIFERATION (SARCOMA OF RIB)

IN A TRAUMATIC TUMOR SIXTEEN YEARS AFTER ITS FIRST APPEARANCE

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AND
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The question as to how long cells which are malignant or potentially malignant can remain in the body without manifesting any tendency to grow, proliferate or metastasize is one of great interest which may throw considerable light on the entire subject of malignant tumors.

Paterson[1] describes a case of gastric cancer in which he operated two years after the onset of symptoms. He found an inoperable carcinoma at the pylorus and did a gastro-enterostomy. The patient continued in good health for six years, without any symptom of extension of the growth or metastasis. Here we have a known cancer which was present for eight years in a spot richly supplied with lymphatics, with no tendency to manifest the ordinary nature of a cancer.

Fig. 1.—Tumor, painted with iodin.

Hertzler[2] has told us of a case of cancer of the breast in which he operated fifteen years ago. The patient has been under observation repeatedly in the interval. At the fourteen-year period she had had no metastasis or extension when she reported for examination. Nine months later she had a small recurrence in the upper end of the scar.

The following case, which deals with a sarcoma, is in line with these cases:

Summary.—Man, aged 36, received a trauma which resulted in the appearance of two small tumors over the region of the ninth rib. These tumors had been present sixteen years, when a sarcoma of the rib beneath them resulted. On removal, these tumors were seen to be sarcomas of the same structure as the sarcoma of the rib.

History.—The man, a farmer, was first seen by us Oct. 3, 1913. Family history was not significant. Personal history was negative for syphilis, rheumatism, tonsillitis and typhoid. At the age of 14, the patient was kicked in the right knee by a horse, sustained a fracture, and has had an ankylosed knee ever since. At the age of 19 he fell across a log, lighting on the right side of his chest in the axillary line. The injury was slight, but within a week or so two small lumps appeared under the skin at the level of the ninth and tenth ribs in the midaxillary line on the right side. They have always been painless, and have never grown sufficiently to notice; in fact, so far as the patient has noticed, they have always remained exactly stationary in size. They have been movable, the size of plums, and soft in consistency. His physicians, including ourselves, have always told him they were lipomas.

Fig. 2.—Same as Figure 3, with the tumors split open.

Nine months ago, without previous injury, he noticed that a hard lump had appeared over the ninth rib on the right side just under these old tumors. It was much larger, somewhat painful and not movable under the skin. It grew slowly at first, but has grown very rapidly during the last three months.

Examination.—Temperature, 98.5; pulse, 86; blood pressure, 120; leukocytes, 6,000; heart and lungs, no abnormalities. There is a hard mass, about 4 by 5 inches, over lower ribs on the right side. It is dense and adherent to the ribs. Two smaller masses in the same locality, movable under the skin, feel like lipomas.

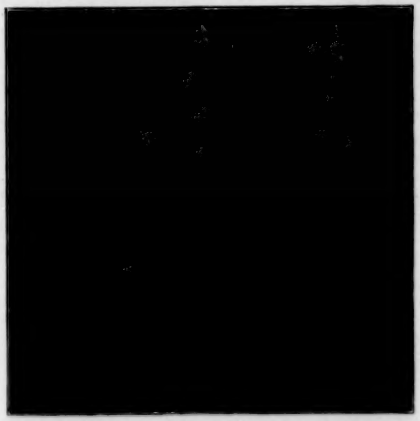


Fig. 3.—Photomicrograph of tumor on rib.

Operation.—Oct. 3, 1913, under gas-ether anesthesia, by the ordinary method, no attempt being made to use the negative pressure cabinet or intratracheal insufflation, a mass was

1. Paterson, in Murphy's Clinics, iii, No. 1.
2. Hertzler, A. E.: Personal communication to the authors.

revealed, comprising parts of the ninth and tenth ribs, which was removed by resecting these ribs without opening the pleura. A small plaque of growth on the pleura was revealed just under the site of the growth on the ribs, and necessitated the opening of the pleura for its removal.

The two small tumors previously mentioned were seen to be purplish encapsulated masses in the muscle and subcutaneous tissue, and were easily removed.

Fig. 4.—Photomicrograph of one of the small original tumors.

Pathologic Examination.—The material consisted of: (*a*) parts of two ribs united by a hard, dense, white fibrous growth, the size of a man's hand, and (*b*) two small lumps of tissue, which were soft and were encapsulated everywhere by a membrane as thick as the dura mater. On section, both of these showed the structure of a small round-cell sarcoma. The sarcoma from the ribs was interlaced with fibrous strands, while the small tumors were almost free from connective tissue framework.

Certain points in connection with this case may perhaps be emphasized. First, the identical structure of all these tumors: the original tumors and the new tumor on the ribs are all the same sort of sarcoma. Second, the complete encapsulation of original tumors. Third, the fact that they had been present for sixteen years without pain or growth.

The question arises whether they were sarcomas from the start, that is, whether they were the original focus of sarcoma, or whether they simply suffered in the general sarcomatous degeneration in the region. Whether, in short, the sarcoma was primary in the ribs or in these small tumors. Whoever defends the hypothesis that it was primary in the ribs will have to take into consideration the necessity for an explanation of the fact that a sarcoma developed at the exact site of a trauma received sixteen years previously.

Lund[3] reviews the surgery of sarcoma of the chest wall. The entire number of cases collected by him was twenty, to which he added one personal case. The case here reported is therefore of interest on account of its rarity as well as its pathologic significance.

Rialto Building.

3. Lund: Ann. Surg., 1913, lviii, 206.

FISTULA OF THE ESOPHAGUS AND BRONCHUS

REPORT OF A CASE, WITH ROENTGENOLOGIC FINDINGS

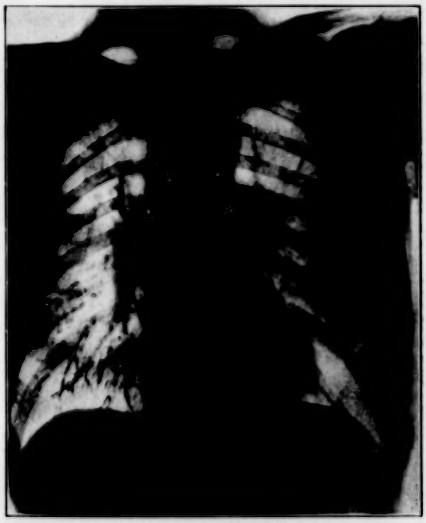
RAYMOND COLE BEELER, M.D., INDIANAPOLIS

On the afternoon of May 7, 1915, I was called to the Indianapolis City Hospital to make a Roentgen examination of the esophagus. The patient had been admitted to the hospital that afternoon and had alarmed the intern, so he called a member of the attending staff.

History.—Mr. H. C. B., aged 58, white, a native of Ireland, married, in the real estate business, with negative family history, had had syphilis forty years ago and myocarditis one year ago; he denied gonorrhea, and there was no history of swallowing escharotics. The present illness began six months ago with difficulty in swallowing. The patient was unable to swallow solids or liquids. He then got better and worse. This continued until one week ago, when he had a hemorrhage of bright red blood which he thought was from the stomach. Up to the time he had this hemorrhage he had gradually become worse and could only with difficulty swallow food and liquids. He was not able to take liquids or drink water since the time he had his hemorrhage. He had violent choking spells when he attempted to eat or drink.

Examination.—The patient was much emaciated, had a distressed look, the breathing was labored, the breath sounds roughened, mostly bronchial, there were some fine moist râles throughout chest, and he had a rasping cough.

Roentgen Findings.—The patient was given a mouthful of barium mixture and told to swallow. The fluoroscope showed



Roentgenogram of esophagobronchial fistula.

the meal to go down the esophagus a short distance and then to go through and fill the bronchi, both lower trunk areas and the bronchioles. These were all seen distinctly as the barium filled them. The patient went into a fit of coughing and expelled a considerable quantity of the meal. He was at once rushed to the roentgenographic room, and stereoscopic roentgenograms of the chest were made. The

roentgenogram here shown is one of the pair made at this time. The main trunks and branches are easily made out, but they are not shown in the dilated form as we saw them on the screen. Just above the bifurcation there is made out a mass of barium, probably a dilation at the region of the fistula. There was an area of denser lung shadow in the left middle, and the upper trunks looked to be dilated and thickened. The patient was sent to the ward and fed by rectum. Gastrostomy was performed the third day. The patient stood the operation well. On the seventh day the patient died, apparently from pneumonia. Unfortunately necropsy was not obtained.

Laboratory Report.—Sputum negative. Urine negative. Wassermann positive.

COMMENT

This case is interesting because of the value of the stereoroentgenograms obtained, giving the exact anatomy of the lower bronchial trunk areas in the lung of a living subject. I have not been able to find any similar case reported in literature. The primary cause of this esophagobronchial fistula was probably syphilis.

Hume Mansur Building.

A SPECIMEN OF "AUTO-AMPUTATION" OF THE APPENDIX

J. R. JUDD, M.D., HONOLULU, H. I.

In "Keen's Surgery," v, 741, J. B. Murphy uses the expression "auto-amputation" of the appendix. The specimen illustrated in the accompanying photograph seems to belong to this classification, and is reproduced as a pathologic curiosity.

The patient from whom the appendix was removed was a man, aged 24, with an indefinite history of appendix inflammation.

During the course of a kidney operation, the appendix was exposed through the lumbar incision and was brought

Specimen of "auto-amputation" of the appendix.

up into the wound. It was found to be connected with the cecum only by a fine adhesion, so delicate that simply pinching it between the fingers sufficed to separate it. Careful probing failed to disclose any opening into the cecal cavity. The proximal end was also solid. The appendix was 7 cm. in length, not dilated and contained a small amount of mucoid material. It showed the lesions of a chronic interstitial inflammation.

CERVICAL RIB AS A CAUSE OF BRACHIAL PAIN

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Cases of cervical rib, while seldom reported, are not uncommon. When the chief complaint is brachial pain, one must always be on guard, as the diagnosis is frequently confused with rheumatism, brachial neuralgia, or neuritis. Miss T., a college student, complained of pain in the right arm and

Cervical rib as cause of brachial pain.

side of the neck. She had been under osteopathic and electric treatment for ten months under a diagnosis of neuritis. The pain had started about one year before in the right arm, and had been growing steadily worse, extending up into the neck and side of the head. She suffered from nervousness and insomnia, and at times the pain was so severe that opiates had to be given.

The patient was 21 years of age, and weighed 105 pounds, which she stated was about 10 pounds under her normal weight. Personal and family history were negative. Both parents were living and healthy. Her pulse and temperature were normal. Nothing could be seen on inspection, as there was no especial bulging over the region complained of. She was very tender to palpation above the clavicle and to each side of the cervical vertebra. There was also a firmer resistance to the examining fingers than is normal to that location.

"A pulsating mass above the clavicle means cervical rib nine times out of ten," says Cabot. This characteristic sign, caused by the pulsation of the subclavian artery which usually overrides the rib, was not felt perceptibly in this case. The constant brachial pain with the marked tenderness in that region pointed strongly to cervical rib, and such a diagnosis was given.

The patient returned to her home in Pueblo, and the diagnosis was confirmed by the Roentgen ray, as shown in the accompanying negative taken by Dr. Epler. The patient was subsequently operated on by Dr. Pairs of Pueblo with excellent results.

700 East Thirty-First Street.

Good Food.—What is needed is not so much uniform food laws throughout the country as uniform food definitions for the guidance of those who have in charge the enforcement of the laws. Let us have uniform food definitions that will be accepted by all and then we shall hear very little about the necessity for uniform food laws. If the manufacturers are really sincere and desire to have uniformity other than on a low plane, they can accomplish the most by encouraging the establishment of definitions and standards that will afford protection alike to the consuming public and to the honest manufacturer.—*Bulletin of the North Dakota Agricultural Experiment Station.*

New Instruments and Suggestions

AN AID TO A GOOD FUNCTIONAL RESULT IN ARTHROPLASTIES ON A DIGIT

PAUL GALLAGHER, M.D., EL PASO, TEXAS

In doing my first arthroplasty on a finger, I was impressed with the need of some apparatus which would at the same time give proper exercise to the joint operated on but would be neither cumbersome nor expensive. With this in view, I devised the apparatus shown in the accompanying illustrations.

The arthroplasty was done on the proximal interphalangeal joint of the fourth finger to relieve a traumatic bony ankylosis. As a result of exercise prescribed, two months after the operation, the patient could lift and carry with ease, without assistance and on this joint alone, a weight of 7¾ pounds. Voluntary flexion was present to about 45 degrees and extension to about 170. Any article, such as a pick or ax, could be grasped firmly and securely. In other words, the hand on which the operation was performed is about as good as its normal fellow.

Supervision and encouragement by the surgeon are needed, but I am confident that with some such apparatus fewer fingers need be sacrificed and better surgery will be done.

Fig. 1.—Method of obtaining primary passive flexion.

Fig. 2.—Method of obtaining primary passive flexion.

The apparatus consists of a cuff of old rubber glove (*A* in the illustrations), a piece of bandage (*B*) and a thin strip (*C*) about 8 inches long to which are attached by adhesive tape one or more small rubber bands. The number of bands is to be increased from day to day as the need of greater resistance is met.

Figures 1 and 2 illustrate the method of getting primary passive flexion. From day to day the bandage piece is tightened and the cuff slipped up on the arm until flexion is such that the bandage piece will no longer stay on the finger.

Fig. 3.—The ends of the cuff of the rubber glove are tied to the ends of the bandage.

Fig. 4.—Method of obtaining greatest possible passive flexion.

Fig. 5.—Method of obtaining forced flexion and also of developing flexors and extensors.

Figure 3 illustrates the change to be made then and to be persisted in till the piece of bandage, coming around from the back of the hand, can give no greater flexion.

Figure 4 illustrates the method of obtaining the most complete degree of passive flexion possible.

Figure 5 illustrates the method of getting forced flexion and of developing the flexors and extensors too.

I do not believe that the method has been described before, as I was unable to find anything similar when looking up the subject for my own guidance.

AN AUTOMATIC TRANSFUSION APPARATUS*

MORRIS KUSH, M.D.,† NEW YORK

In spite of the apparent simplicity of the cannula and syringe methods now used in transfusion, several assistants and more or less elaborate preparations are always needed in order to make the operation go smoothly. With the purpose of eliminating all assistants, and reducing the entire process to as simple a procedure as possible, but still retaining the efficiency of the older methods, the apparatus herewith presented was devised.

The idea of using one syringe in transfusion was first suggested by the Schreiber salvarsan apparatus. Experimentally it was shown that the ball valve was entirely unsuitable for working with blood, owing to the fact that whirring of the valves soon caused clotting. The valve idea, however, was not abandoned, and finally the principle of the sliding valve was utilized in making this machine.

By reference to the accompanying diagram (Fig. 1) the mechanism will readily be understood. Essentially we have a cylinder (*A*) containing a piston (*B*). The cylinder contains two ports (1 and 2), an opening in the base (3), for the escape of air, and a set screw (4). The piston contains a passage way (5) and a milled groove (6). This groove is so built that it receives the set screw, and the latter limits the motion of the piston so that at the end of each excursion the passage way (5, lower end) is exactly opposite either the upper or lower port, and absolutely prevents any rotation. A spring (7) is placed between the piston and the cylinder. This spring is of such strength that it will just support the piston plus an empty 20-c.c. record syringe at the upper port.

The theory of action is as follows: Port 1 is connected with the donor and Port 2 with the recipient. The record syringe is fitted into the passage way (5, upper end). Aspiration on the handle of the syringe raises the piston (*B*) so that the passageway (5, lower end) is opposite Port 1 and permits of the entrance of blood from the donor into the syringe. Depression of the handle of the syringe shifts the piston (*B*) so that the passageway (5, lower end) is opposite to Port 2 and permits of the expulsion of the blood from the syringe into the recipient.

The only criticism which has been made is that clotting will occur because at the end of each cycle the apparatus is not flushed with saline. So far as the valve is concerned,

* From the Surgical Service of the Mount Sinai Hospital.
† Dr. Kush died, May 27, 1915.

this has been made to fit so accurately that the blood is exposed to a perfectly smooth, continuous passage, and clotting has not occurred. So far as the syringe is concerned, this drawback has been overcome by making use of a method suggested by Dr. C. A. Elsberg. It is well known that to remove clotted blood from a record syringe, all that is necessary is to place it on ice. It was therefore thought possible to *prevent* clotting by keeping the syringe cool. This is done by spraying the barrel with ether from an atomizer during the course of the transfusion. Paraffin-coated catheters with connecting plugs carry the blood between the instrument and the donor and patient. These have been proved capable of withstanding clotting. The ordinary intravenous cannulas of the Kaliski type are used in the veins. The complete apparatus set up and ready for use is shown in Figure 2.

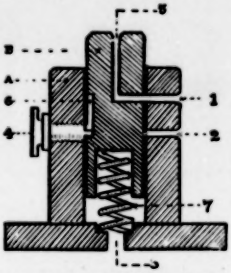


Fig. 1.—Details of automatic transfusion apparatus.

The method of procedure is as follows: The entire apparatus is rendered sterile by boiling, and then the tubes are taken from a supply prepared in advance. The cannulas are introduced into the veins, that in the donor pointing peripherally and that in the recipient centrally. The tubes are connected with the valve, and the syringe, half full (10 c.c.) of normal saline solution, is attached to the piston. The solution is expelled through each tube, leaving an air-free circuit. The trocar is removed from the donor's cannula, and the upper tube leading to Port 1 attached. The lower tube from Port 2 is attached to the recipient's cannula. Transfusion then proceeds by manipulating the handle of the syringe in the usual fashion, the barrel being subjected to the ether spray throughout the entire procedure. Any desired amount of blood can then be transfused.

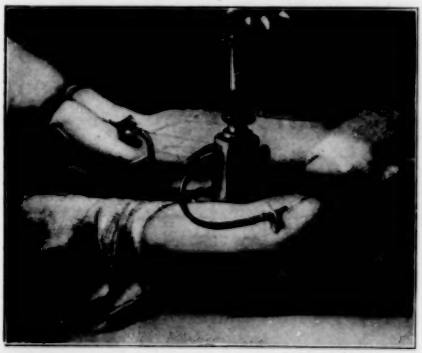


Fig. 2.—Automatic transfusion apparatus ready for use.

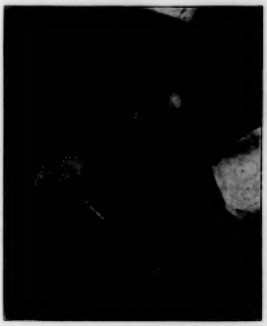
Experimentally the device has proved efficient. Several dogs have been transfused, and a number of phlebotomies have been performed. Two successful human transfusions, one of 260. c.c. and one of 160 c.c., have also been performed.[1]

1. The apparatus here described is manufactured by Tiemann & Co., New York.

A SIMPLE OPERATING MALLET*

HENRY W. MEYERDING, M.D., ROCHESTER, MINN.

In surgery of the bone it is important to be able to watch the cutting edge of the chisel, and accurately to gage the force of the blow without danger of striking the hand and tearing the glove. The mallet of my design here illustrated has been used with satisfaction for several years in the Mayo Clinic. It is an alloy of zinc, copper and aluminum so composed that the metallic ring of the hammer is avoided, so shaped as to allow a firm grip, and heavy enough to deliver a forceful blow. It measures 8 inches in length, and the diameters are 2½ inches at the head and 1¼ inches at the handle.



Operating mallet.

DEXTROSE COLORIMETER

PHILIP ATLEE SHEAFF, M.D., PHILADELPHIA

In THE JOURNAL, April 25, 1914, p. 1307, Kleiner describes "A Clinical Method for the Rapid Estimation of the Quantity of Dextrose in Urine." This method has proved of much use to myself and certainly to all others who have availed themselves of Kleiner's suggestions. As a further aid in the technic, the accompanying illustration will make clear a container for the "standard vials" which I have constructed.

Container and screen for standard vials.

* From the Mayo Clinic.

The solutions vary by gradations of 0.25 per cent., reaching a maximum of 3.5 per cent.

When in use, the solution to be tested is placed in a fixed position on a shelf behind one of the holes shown in the black screen, while one of the "standard vials" is placed alongside of it back of the remaining opening. Back of both vials is fixed a white opaque glass. When not in use, the black screen and the glass are held securely in the top of the closed box, and the solutions are kept in the dark.

The "standard vials," prepared as Kleiner directed, have changed color in my hands since being made up, shortly after his paper was published, and in the "standard vials" now in use I have omitted adding to the filtrate the ammonium hydroxid solution of Kleiner's formula, and have substituted 1 c.c. of commercial formaldehyd solution to 9 c.c. of the filtrate.

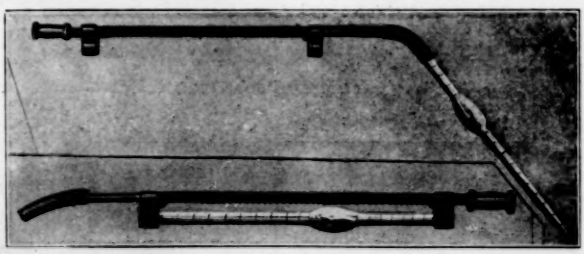
This gives a series of lighter blues, the permanency of which remains to be decided by the test of time.

4008 Baring Street.

A COMBINATION HOLDER AND ASPIRATOR FOR USE WITH THE BLOOD PIPET*

GORDON J. SAXON, M.D., AND LOUIS E. DRUMMOND
PHILADELPHIA

Most clinical laboratory workers have from time to time encountered annoying incidents in connection with the simple procedure of doing a leukocyte or red blood cell count. The rubber tubing has at times been punctured in the process of being used to wrap the ends of the counting pipet, and the contents have escaped in transit from the bedside to the laboratory.



Combination holder and aspirator for use with the blood pipet.

The accompanying illustration shows an implement which is a combination of holder and aspirator for the ordinary blood-counting pipet, and is self-explanatory.

This instrument was made experimentally by Edward P. Dolbey & Co. of Philadelphia and may now be obtained from that firm.

5314 Spruce S.

* From the Laboratory for Cancer Research at the American Oncologic Hospital.

APPARATUS FOR THE REMOVAL OF FOREIGN BODIES FROM THE BLADDER

H. MCCLURE YOUNG, M.D., ST. LOUIS

Any one who has attempted to remove a foreign body from the bladder must have been impressed with the inconvenience attending the use of any beaked cystoscope. The body can be found and grasped with the forceps, but a difficulty immediately arises when we attempt its removal. It is the exception that even a bit of catheter can be withdrawn through the lumen of the cystoscope, and where the greater part of this lumen is already taken up with a lens system, such a procedure becomes practically out of the question. The most rational procedure, therefore, is to remove the cystoscope and forceps together, and allow the firmly grasped foreign body to follow after. To such a maneuver, however, the beak of the cystoscope presents a very serious obstacle. The projecting forceps form a continuation of the shaft of the cystoscope, but the beak is set at an angle and will effectually prevent the removal of the cystoscope as long as the forceps are in place. Even when flexible forceps are used, matters are not much better for the reason that the forceps tend to lose their flexibility to a large extent when the jaws are once set.

Apparatus for removal of foreign bodies from the bladder.

The accompanying illustration shows a very simple apparatus designed to overcome these difficulties. It is modeled after an ordinary Koch urethroscope, but is somewhat longer and is provided with a glass window and irrigating cock. It renders possible the dilatation and careful examination of the bladder. The foreign body can then be grasped at the most advantageous point and drawn close up to the mouth of the instrument. If it cannot then be drawn through the lumen, the cystoscope and forceps can be withdrawn together and the foreign body allowed to follow. In this manner it should be possible to remove any object whose passage through the urethra is not in itself an infeasible procedure.

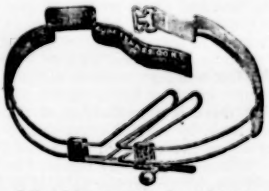
600 Carleton Building.

Rabies.—There is no spontaneous origin of this disease of animals and of man. Every case of rabies is due to infection from some previous case.—*Bulletin State Board of Health of Maine.*

A SELF-RETAINING RETRACTOR FOR THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM

JOSEPH EASTMAN SHEEHAN, M.D., NEW YORK

The retractor here illustrated consists of two pieces of steel wire connected by a firm band, which is also of steel, held in position by a screw. The outer face piece consists of malleable material so that one can adjust it to the various conformities of the face.



Self-retaining retractor for submucous resection of nasal septum.

After it has been placed in position, it is held firm by a linen band which is adjusted to the subject's head. The retractor is particularly serviceable when an assistant is not to be had, and more so when the operation is performed in a sitting posture. The danger of injuring the tissues is lessened, and the operating surgeon has always before him a clear view of the operative field.

214 West Seventy-First Street.

HERNIA RECORD CARDS

CARLETON DEDERER, A.B., M.D., LOS ANGELES
Clinician in Surgery, Los Angeles Department, University of California Medical College

In order to facilitate the history taking and keeping of proper records in hernia cases, I have devised the following form to be printed on the history cards in addition to the usual matter. This card should be used throughout the case in order that the record may be complete. The preferable size is 8½ by 11 inches. This size is suitable for filing in the standard size cabinet.

I. Family history of hernia or hydrocele.
II. Previous hernia history.
III. History of present condition.
  1. Onset.
  2. Cause attributed.
  3. Duration.
  4. Pain.
  5. Spontaneously reducible.
  6. Any general symptoms.
  7. Truss worn.
IV. Examination for hernia, hydrocele and varicocele.
  1. Location and direction.
  2. Appearance of skin.
  3. Shape.
  4. Size.
  5. Character of contents.
  6. Expansile impulse on coughing.
  7. Reducible.
  8. Character of rings.
  9. Normal anatomic structures and position.
  10. Presence of hydrocele, varicocele or inflammation.
V. Treatment.
  1. Truss or
  2. Operation.
    (a) Incision.
    (b) Findings.
    (c) Method of repair.
    (d) Sutures.
    (e) Character of recovery.
VI. Conditions at subsequent examinations.

602 Hollingsworth Building.

Therapeutics

ACUTE DIARRHEA

This simple, frequently occurring indisposition may be due to many causes; but whether the diarrhea is due to a poison from without or to a disturbance from within, it is of primary importance to prevent further irritation and further absorption of toxins by free catharsis. This catharsis should be of our own making; the diarrhea is almost never sufficient, especially if a speedy cure is desired. A diarrhea will often cure itself in time, but the disturbance may last for days, and may leave a subacute irritation of the bowels for several weeks. Therefore, the safest and quickest method of curing a diarrhea is to begin with free therapeutic catharsis.

In a few words, the treatment of acute diarrhea, with or without pain, is:

1. Give castor oil (30 c.c. or 1 fluidounce), on black coffee, on water with a little salt undissolved in the bottom of the glass, or on lemon juice; or calomel, 0.20 gm. (3 grains), and sodium bicarbonate, 1 gm. (15 grains), perhaps taken with Vichy; or a Seidlitz powder, Rochelle salt, 20 gm. (5 drams), or magnesium sulphate, 15 gm. (one-half ounce).

2. Allow no food for from twelve to twenty-four hours.

3. Give a good quantity of hot water, or cool water if hot water is refused. Give hot tea if desired.

4. There should be absolute rest on a couch or bed.

5. Two hours after the purgative has been given, begin the administration of bismuth subcarbonate, 1 gm. (15 grains), and phenyl salicylate (salol), 0.30 gm. (5 grains), combined in one powder, and administer such a dose every two hours for ten doses; or, bismuth subcarbonate, 2 gm., and phenyl salicylate, 0.50 gm., may be given every two hours for five doses.

6. If there are much intestinal gas and colicky pains, 2 teaspoonfuls of paregoric, in hot water, should be given every two hours for two or three doses.

7. If the bowels move too many times from the cathartic, $\frac{1}{40}$ grain of morphin sulphate should be given by the mouth, and repeated in three hours, if needed. Large doses of morphin in such a condition are not needed.

8. If the patient is faint, give $\frac{1}{30}$ grain of strychnin sulphate by the mouth, and, if deemed advisable, one-half teaspoonful of the aromatic spirits of ammonia, repeated if necessary.

9. If the intestinal pains are severe, a hypodermic of one-eighth grain of morphin sulphate, with $\frac{1}{150}$ grain of atropin sulphate, might be given. Rarely in this condition is a larger dose of morphin needed or necessary. It is, of course, better to avoid morphin, if possible.

10. If the patient is already faint from the pain and from profuse watery stools before the treatment is begun, it may be best to postpone the cathartic and give a hypodermic of morphin and atropin as above, and perhaps $\frac{1}{40}$ grain of strychnin sulphate. This hypodermic treatment, combined with rest and a hot water bag to the bowels, and perhaps a cup of hot coffee or tea will soon revive the patient. A laxative may be given later, and generally should be, else irritants will remain in the bowels.

11. In from twelve to twenty-four hours hot malted milk, some cereal gruel, milk toast, or mutton broth may be given, and repeated; later a poached egg, and still later a small piece of steak or a lamb chop may be allowed the patient.

12. Bismuth subcarbonate, 1 gm., may be given three times a day for a few days, if thought best, but not for too long, as bismuth tends to accumulate in the bowels, and may cause a new irritation. Frequently a Blaud pill, two or three times a day, is indicated. The diet should be gradually enlarged, fruit and laxative vegetables being the last to be added to the list. The bowels should be kept warm for some days after an apparent recovery.

N. B.: There is no excuse for giving calomel in divided doses, as it causes irritation of the upper bowel. One does not want Doses "1," "2" and "3" of calomel to be acting and Dose "10" not even yet started. Therapeutic catharsis is purging, not dribbling. This foolish one-tenth-grain-dose-of-calomel-every-hour fad should be given a decent burial. If it is claimed that calomel in small doses is a bowel antiseptic, then the answer is, Why cause poisoning to produce antisepsis? Salol in small doses is a harmless antiseptic; small doses of calomel may mercurialize the whole system. The late vomiting after an operation is frequently due to the administration of divided doses of calomel.

HEART TIRE

It is now recognized that any infection can cause weakness and degeneration of the heart muscle. The *Streptococcus rheumaticus* found in rheumatic joints is the cause of such heart injury in rheumatism. That prolonged fever from any cause injures the heart muscle is well known, and cardiac dilatation after severe illness is now more carefully prevented. It is not sufficiently recognized that chronic, slow-going infection can injure the heart. Such infections most frequently occur in the tonsils, in the gums, and in the sinuses around the nose. Tonsillitis, acute or chronic, has been shown to be a menace to the heart. Acute streptococcic tonsillitis is a very frequent disease, and the patient generally, under proper treatment, quickly recovers. However, tonsillitis in a more or less acute form, sometimes so mild as to be almost unnoticed, probably precedes most attacks of acute inflammatory rheumatism. Chronically diseased tonsils may not cause joint pains or acute fever, but they are certainly often the source of blood infection and later of cardiac inflammations. The probability of chronic inflammation and weakening of the heart muscle from such slow-going and continuous infection must be recognized and the source of infection removed.

The determination of the presence of valvular lesions is only a small part of the physical examination of the heart. Also, too readily is the heart eliminated from consideration as the cause of the general disturbance because murmurs are not heard. A careful decision as to the size of the heart will often show that it has become slightly dilated and is a cause of the general symptoms of weakness, leg-weariness, slight dyspnea, epigastric distress, or actual chest pains. In many such cases the patients are treated for gastric disturbance because there are some gastric symptoms. There is no question but that gastric flatulence or hyperacidity or a large meal causing distention of the stomach may increase the cardiac disturbance, and the cardiac disturbance may be attributed entirely to indigestion, but treatment directed toward the stomach, while it may ameliorate some of the symptoms, will not remove the cause of the symptoms.

When an otherwise apparently well individual begins to complain of weariness, perhaps drowsiness in the daytime and sleeplessness at night, or his night's sleep is disturbed, or he has feelings of mental depression, or he says that he "senses" his heart, perhaps for the first time in his life, with or without any edemas of the feet and legs, with or without any pains referred to the heart or heart region, we should presuppose that there is a weakening of the heart muscle until we have, by careful examination, excluded the heart as being the cause of such disturbance.

Although constantly repeated in books on the heart and articles on cardiac pain, it still is often forgotten that pain due to cardiac disturbance may be referred to the shoulders, to the upper part of the chest, to the axillae, to the arms, and even to the wrists, to the neck, and up into the head, and into the upper abdomen. It is perhaps generally auricular disturbance that causes pain to ascend, but disturbances of the ventricles can cause pain in the arms and in the region of the stomach. Not infrequently disturbances of the aorta cause pain over the right side of the chest as well as up into the neck. Real heart pains frequently occur without any valvular lesion, and also, as necropsies have shown, without sclerosis of the coronary vessels.

While angina pectoris is a distinct, well-recognized condition, pains in the above-mentioned regions, especially if they occur after exertion or after mental excitement or even after eating (provided that a real gastric excuse has been eliminated), are due to a disturbance of the heart, generally to an overstrained heart muscle or to a slight dilatation. Too much or too little blood in the cavity of the heart may cause distress and pain, or an imperfect circulation through the coronary arteries and the vessels of the heart, impairing its nutrition or causing it to more readily tire, may be the cause of these cardiac pains, distress, or uncomfortableness.

So frequently is the cause of these pains, disturbances and weakness overlooked and the stomach or the intestines treated, or treatment is aimed at neuralgias, rheumatisms or rheumatic conditions, that a careful examination and consideration of the part the heart is playing in the causation of these symptoms should be made.

The treatment required for such a heart, unless there is some complication, as a kidney complication or a too high blood-pressure or arteriosclerosis (and none of these causes necessarily prohibit energetic cardiac treatment) is digitalis. If there is doubt as to the condition of the cardiac arteries, digitalis should be given in small doses. If it causes distinct cardiac pain, it is not indicated and should be stopped. If, on the other hand, improvement occurs, as it generally does, the dose can be regulated by the results. The minimum dose that improves the condition is the proper one. Enough should be given, and not too much. Before deciding that digitalis does not improve the condition (provided it does not cause cardiac pain), the physician should know that a good and efficient preparation of digitalis is being taken. Strychnin will sometimes whip up a tired heart and tide it over periods of

depression, but it is a whip and not a cardiac tonic. While overeating, all overexertion, and alcohol should be stopped, and the amount of tobacco should be modified, there is no treatment so successful as mental and physical rest and a change of climate and scene with pure air.

Many individuals with these symptoms of cardiac tire think that they are house-tired, shop-tired, or office-tired, and undertake physical exercise, such as walking, climbing, tennis playing or golf playing, to their injury. Such tired hearts are not ready yet for added physical exercise; they should be rested first.

The treatment of this cardiac tire is not complete until the tonsils, gums, teeth and the nose and its accessory sinuses are in good condition. Various other sources of chronic poisoning from chronic infection should of course be eliminated, whether an uncured gonorrhea, prostatitis, some chronic inflammation of the female pelvic organs, or a chronic appendicitis.

Longcope[1] has recently shown that repeated, and even at times one protein poisoning can cause degeneration of the heart muscle in rabbits. Hence it is quite possible that repeated absorption of protein poisons from the intestines may injure the heart muscle as well as the kidney structure; consequently, in heart weakness, besides removing all evident sources of infection, we should give such food and cause such intestinal activity as to preclude the absorption of protein poison from the bowels.

CHRONIC APPENDICITIS?

Many patients with a condition diagnosed as chronic appendicitis, when operated on, are not relieved of their pain, constipation, and general abdominal discomfort. In many cases, with what seems to be positive evidence, both by history and physical signs, of a subacute or chronic appendicitis, the appendix is found normal. In many other cases, the diagnosis is found correct, and relief follows operative removal. The fact still remains, however, that a certain large percentage of appendectomized patients disappoint their physicians by continuing to have pain, which we helplessly attribute to "operative adhesions" and which we "think" will gradually subside.

The diagnosis of chronic appendicitis, like that of many other conditions, should be made only by exclusion. Gallbladder disturbance, prolapsed right kidney, and ovarian inflammation must all be excluded, if possible. Adhesions and bands in the appendix region may perhaps be included in a diagnosis of chronic appendicitis, although a better phrase would be "chronic disturbance in the appendix region." An insufficient ileocecal valve, or an enlarged and movable cecum, as first pointed out by Blake[2] may be the cause of such symptoms as constipation, gas, and distention.

The following should be the rule of procedure before operation is done for chronic pain and disturbance in the right lower abdomen:

1. Careful physical examination should be made to exclude if possible gallbladder, kidney, ovarian, or pelvic causes of the right abdominal disturbance.

2. Carefully studied bismuth pictures of the intestines should be taken.

1. Longcope, W. T.: The Effect of Repeated Injections of Foreign Protein on the Heart Muscle, Arch. Int. Med., June, 1915, p. 1079.
2. Blake, Joseph A.: Ann. Surg., May, 1912.

It should be recognized also that many times no conclusion as to the exact conditions in this region can be made until the abdomen is opened. At the operation the gallbladder, the right kidney, the right ovary and tube should all be carefully studied; bands and adhesions should be sought for and broken up, if possible. Also, it may be wise to operate on a cecum for ileocecal valve insufficiency, or for an enlarged pendant cecum. At least these conditions cause symptoms, and many times proper surgical treatment at the time of the primary operation obviates the necessity of a secondary operation.

The main point of this article is that it is often not sufficient, with chronic pain in the lower right abdomen, to remove the appendix, however abnormal it may be found. Especially if the appendix is found normal (though of course it should be removed), the other conditions that cause abdominal disturbance should be investigated and surgically treated.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

MERCURIALIZED SERUM, Mulford.—A solution of mercuric chloride in normal horse serum, diluted with physiologic sodium chloride solution.

Actions and Uses.—Mercurialized serum, Mulford, is proposed for the treatment of syphilis, particularly the cerebrospinal type. It is an attempt to produce a preparation which, while therapeutically active, possesses comparatively low toxicity and slight local irritative action, and which consequently is adapted to intraspinal use and can be used intravenously without danger of phlebitis.

Dosage.—Intraspinally, 30 Cc. of a solution, the dose containing the equivalent of 0.0013 Gm. (1/50 grain) mercuric chloride, increased, when tolerance is established, to 30 Cc. of a stronger solution, the dose containing the equivalent of 0.0026 Gm. (1/25 grain) mercuric chloride. Intravenously, 2 Cc. of a solution, the dose containing the equivalent of 0.0055 Gm. (1/12 grain) mercuric chloride, increased, if indicated, to 8 Cc. of the same solution, the dose containing the equivalent of 0.022 Gm. (1/3 grain) mercuric chloride.

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SATURDAY, OCTOBER 2, 1915

OBJECTIONABLE FEATURES OF GARBAGE DISPOSAL

In almost every large community there are plants for the disposal of garbage and offal; they represent a feature of the conservation processes which economic conditions have made necessary. The work includes the recovery of grease and the manufacture of tankage, a product at first used solely as a fertilizer but now beginning to enter into the feed of the domestic animals. The processes are not infrequently attended with the production of odors and sometimes of dust of a disagreeable nature, leading to complaints and raising questions of public hygiene and comfort. Where waste-disposal engineers are not available, the expert advice of physicians is drawn on. Testimony is sought as to the alleged nocuous or innocuous character of the subject of complaint; but, owing to the meager character of the information on this topic possessed by most of us, the outcome of the testimony is often quite contradictory.

Some of the offensive odors from the fat rendering or reduction plants originate from the raw "green" garbage. These odors, as well as certain others arising in the manipulations, are of a rather local nature. Other odors from some of the treating methods may be far more objectionable in that they are capable of causing discomfort several miles away. How to avoid or counteract these difficulties in the economic handling of large quantities of very low grade materials, particularly in the neighborhood of such places as Chicago and New York, is a problem that has taxed the ingenuity of many experts. The Central Testing Laboratory of New York City has lately made a chemical study of the nature of the odors and dust in garbage reduction plants and also the present and possible means of treating them.[1] In the reduction works located near to inhabited sections, garbage must be transported in closed scows or cars; the handling of the garbage, both raw and in process, and other obnoxious treatments should properly be carried out inside of buildings in which the odors can be properly disposed of. In many cases the ventilating air can be drawn through "scrubbers," which are devices for washing the gases with water to dissolve or retain some of the objectionable constituents. Afterward this partly purified air can be passed through devices for scenting it with wood-tar oils or coal-tar. Systems of this nature are successfully used in treating packing-house air. For many persons the sense of smell seems to be the guardian of health, so that the "covering up" or substitution or confusion of odors is quite as comforting as the more rational elimination or destruction of the offending respiratory invader.

In the manufacture of tankage, garbage is necessarily heated in large containers for several hours, usually with the aid of live steam. It is the vent gases from these "digesters" that have odor of more than local importance. According to Mahr and Kraft,[1] the mechanically carried over substances removed by the condensers are principally mineral matter, fats and fatty acids. The volatile substances in the vent gases which are condensable or absorbable in water include alcohol, acetic acid, carbon dioxid, essential oils and sulphur compounds. Of these constituents, the latter two are important from the standpoint of odor. The extremely nauseating odor of the uncondensable vent gases appears to be due to sulphur compounds and other nonsulphur-containing substances, possibly essential oils.

In some plants, very high temperatures are used for destroying the odors and uncondensable vent gases from garbage digesters. Thus they are sometimes sent through the fires required in the devices for drying the tankage. A method of deodorizing packing-house air by means of sulphur dioxid has been said to give good results. According to Mahr and Kraft, it is possible that the sulphur dioxid, formed by heating the vent gases, could be reconducted to the jet condensers, and in this way a deodorization of the condenser water brought about.

However efficient the elimination of the nauseous products of the garbage reduction processes themselves may be, they do not exclude the necessity of maintaining in a cleanly way all plants where garbage is collected, stored and treated. Winds passing over a filthy plant may take up considerable residual odor, even when no garbage is present or in process. The New York experts emphasize the fact that to eliminate this source of trouble, garbage plants should be of the most sanitary construction to permit washing and prevent material lodging in crevices. The cement of concrete floors is readily attacked by the "stick liquor" and garbage, and wooden floors are sometimes put down. As may be easily understood, these soon become of a very objectionable nature and cannot be well cleaned. A concrete floor with a frequently renewed tar coat or one of asphalt would be a great improvement on the wood.

1. Mahr, H. W., and Kraft, A. C.: Investigations on the Nature and Elimination of Odors and Dust from a Garbage Reduction Plant, Jour. Indust. and Engin. Chem., 1915, vii, 778.

To the layman it must seem strange that until recently so little serious study has been given to problems which involve inevitable sources of discontent and occasions for remonstrance in our larger cities. As in the case of the smoke nuisance, the authorities have been content to obey the law of inertia until popular demand has precipitated an immediate and hasty examination of phenomena which have long demanded more careful and detailed scientific investigation. We have become accustomed to a conventional shabby treatment of applied science as a factor in community life and economic progress, but this sometimes ceases to be a joke.

THEORY AND PRACTICE

In his presidential address before the British Association for the Advancement of Science on the subject, "The Common Aims of Science and Humanity," Prof. Arthur Schuster[1] discusses the age-old! ever-recurring problem of the comparative value of theory and practice for accomplishment in life. Much is said in our time of the difference between the academic scientist and the man of affairs. Professor Schuster speaks of England, but some of his remarks apply very aptly to conditions in America; for instance, he says that "sometimes we are recommended to hand over the affairs of the nation to men of business; sometimes we are told that salvation can only be found in scientific methods." An analysis of these type characterizations does not reveal the opposition that is often supposed to exist between them. Schuster justly insists that "every method that leads to a correct result must be called a scientific method," and that therefore when "one man calls for the conduct of affairs on 'business lines' and the other clamors for scientific methods, they either want the same thing or they talk nonsense."

This discussion is of particular interest to physicians because of the unending difference of opinion as to the relative value of theory and practice in medical education. In this, as in everything else, truth lies not at one of the extremes, but between them. Schuster says:

"The most fatal distinction that can be made is the one which brings men of theory into opposition to men of practice, without regard to the obvious truth that nothing of value is ever done which does not involve both theory and practice; while theory is sometimes overbearing and irritating, there are among those who jeer at it some to whom Disraeli's definition applies: 'the practical man is the man who practices the errors of his forefathers.' With refined cruelty Nemesis infects us with the disease most nearly akin to that which it pleases us to detect in others. It is the most dogmatic of dogmatics who tirades against dogma, and only the most hopeless of theorists can declare that a thing may be right in theory and wrong in practice."

"Common sense" is another stereotyped expression which Schuster is inclined to challenge. Huxley is often quoted as declaring that science is organized common sense, but Schuster cannot find a definition of common sense that fits the phrase. "Sometimes the word is used as if it were identical with *uncommon* sense, sometimes as if it were the same thing as common *nonsense*." He suggests that in its best aspect it is that faculty which recognizes that the obvious solution of a problem is frequently the right one. It must not be forgotten, however, that obvious explanations often are quite wrong and that any scientific reason to the contrary, when supported by good observations, makes the common-sense explanation of no value. This is true even with regard to things as to which there is almost universal agreement among mankind. The obviousness of the sun going round the earth has no weight when it comes to the scientific demonstration that the earth goes round the sun. The practical man, proud of his common sense, comes around to the theorist's view in this matter when he knows enough.

All advance in science comes from a combination of theory and practice, or rather, from a successful application of theory to practice. In this way what seemed to one generation the climax of theory becomes to the next generation only a very obvious practical scientific advance. There is no real opposition between correct theory and correct practice. Practice cannot dispense with theory, and theory is sure to become unreal and fallacious when not reduced to practice in some way. The greatest discoverers — Galileo, Pasteur, Kelvin, Lister and practically all the great discoverers in medicine — are always theorists and men of action as well. The opposition between theory and practice is a myth, fostered largely by the bungling theorist who is unable to put his theories into practice, and by the bungling "practical man" who is unable to express the theory which underlies his practice.

THE PANCREAS, AND SUGAR IN THE BLOOD

In recent discussions of the causes of diabetes, two theories have gained prominence. THE JOURNAL has referred to them[1] as the over-production and non-utilization theories, respectively, using these terms in relation to the sugar factor, which naturally forms the essential theme for consideration in this disease. Whether or not it is agreed that the disturbance in the carbohydrate metabolism appears to represent a loss of power of oxidizing glucose, there is one fundamental fact about which no difference of opinion can exist.

1. Schuster, A.: Science, Sept. 24, 1915, p. 397.

1. The Metabolism in Experimental Diabetes, editorial, THE JOURNAL A. M. A., Sept. 4, 1915, p. 878.

In diabetes, the sugar content of the blood is higher than normal and is variable in amount, and, when it is sufficiently high, the glucose escapes through the kidneys into the urine. Hyperglycemia precedes the glycosuria.

At the department of physiology and pharmacology of the Rockefeller Institute for Medical Research, Kleiner and Meltzer[2] have made a series of experimental observations that throw a somewhat different light on the subject of diabetes. Apparently certain striking differences in behavior occur between normal animals and those rendered diabetic by excision of the pancreas, a procedure which is familiarly known to result in glycosuria. Under physiologic conditions, sugar is liberated into the circulation from the liver, where it is stored as glycogen. If this function is imitated in an indirect way by the infusion of sugar solution directly into the circulation, the carbohydrate speedily finds its way out of the blood in some manner or other. Even a very large surplus of glucose will disappear from the blood stream under these circumstances. When the amount is large, part of the sugar is excreted through the kidneys, and part finds its way into the tissues. Before long the glucose content of the blood reaches nearly the same level which it had before the injection. Even in the absence of the kidney function, in nephrectomized animals, for example, the glucose returns to the previous level in about the same length of time, affording a striking example of the ability and readiness of the circulation of a normal animal to rid itself of a large surplus of sugar.

Quite different is the outcome of the introduction of sugar into individuals from which the pancreas has been removed. In such cases the blood is strongly hyperglycemic even before the sugar infusions. Kleiner and Meltzer found here, in contrast with what has just been recited, that the glucose content of the blood is not reduced promptly after the introduction of sugar. Apparently the removal of the pancreas interfered with the power of the circulation to rid itself readily of a surplus of glucose. The possible ability of the liver to provide the circulation with a greater supply of glucose in the absence of the pancreas can certainly be no important factor in these results. The investigators believe these new experiments to show that, in the presence of the pancreas, the circulation rids itself easily of intravenously introduced glucose, but that it is unable to do so satisfactorily in the absence of the pancreas. On the basis of these facts, Kleiner and Meltzer ask whether it is not plausible to assume, further, that the pancreas exerts exactly the same influence when the glucose in the circulation is being supplied in some other manner than by a buret into a vein — by the liver, for instance — through its connections with the circulation. In other words, do not these experiments make the assumption plausible that pancreatic hyperglycemia is due to the fact that, in the absence of the pancreas, the circulation is unable to dispose properly of the dextrose which it receives in normal amounts from the liver?

This is not all. The actual participation of the pancreas in the normal regulatory function is further suggested by the fact that the ability of the circulatory apparatus of animals to get rid of a surplus of glucose injected intravenously — a function which is impaired in the absence of the pancreas — can be temporarily restored by an intravenous injection of a pancreatic emulsion. Furthermore, such a procedure is also capable of reducing the hyperglycemia due only to depancreatization to a normal level of the sugar content of the blood.

It is too early to speculate extensively on the nature of the factors here involved. These interesting observations add one more link to the chain of evidence regarding the conspicuous performance of the pancreas in the disposal of sugar in the organism. Again, it becomes obvious that such effects of the pancreas must be of a chemical rather than a nervous character.

2. Kleiner, I. S., and Meltzer, S. J.: Retention in the Circulation of Dextrose in Normal and Depancreatinized Animals, and the Effect of an Intravenous Injection of an Emulsion of Pancreas upon this Retention, Proc. Nat. Acad. Sc., 1915, i, 338.

THE SURGICAL TREATMENT OF NEPHRITIS

Since Reginald Harrison, in 1896, reported an unexpected improvement in the symptoms of acute and subacute nephritis after incision of the renal capsule, operation has been performed with apparent success in many cases of nephritis of various types. Ruge,[1] who carefully reviews the literature, points out that the examination of kidneys exposed in these operations, as well as recent experimental work, in some ways have revolutionized our ideas about nephritis. Thus, it has been established that albuminuria, even when accompanied by casts and red blood cells, does not necessarily indicate nephritis as the term is understood usually, for purely mechanical factors may so interfere with the renal filter as to produce the urinary picture of nephritis. Conversely, in chronic nephritis as determined by microscopic examination, all symptoms may be absent, or a severe hemorrhage or colic may be the first and indeed the only sign. Of especial interest are observations to the effect that acute infection may develop in one kidney, or part of one kidney, and later be followed with injury to the healthy tissue by so-called nephrotoxic substances. The results of experiments indicate that increased blood pressure is not produced by mechanical changes in the renal vessels, but is probably due to resorption of degenerating renal epithelium.

In acute nephritis an explanation of the good results of capsular incision and capsular removal is not diffi-

1. Ruge, E.: Ueber den derzeitigen Stand einiger Nephritis-Fragen und der Nephritis-Chirurgie, Ergeb. d. Chir. u. Orthop., 1913, vi, 503.

cult, since pressure on swollen and inflamed tissue is relieved. After injecting diuretic solutions in cats Gawrilow obtained from two to four times as much blood in the renal vein, and from two to four times as much urine was collectible from the decapsulated as from the untouched kidney. The pressure of the capsule seems to establish a vicious cycle by increasing the circulating disturbance and thus causing even greater injury to the epithelium. In experimental toxic nephritis in dogs, Onorato reports recovery in five out of eight cases in which decapsulation was performed, while all the animals not operated on died. If these observations are in harmony with the conditions in man, certainly surgical treatment is indicated in all acute conditions in which conservative treatment does not succeed. In eclampsia, the variable severity of symptoms renders difficult the comparison of statistics. The general attitude of the observers now seems to favor decapsulation in severe cases. Sippel states that the operation is indicated when threatening symptoms of severe nephritis remain after the uterus has been emptied. After ureteral catheterization the kidney which shows greater injury should be treated. If there is no difference, both may be decapsulated if the condition of the patient permits. The operative mortality is relatively slight. Convulsions, it is said, usually stop at once and coma rapidly disappears.

In nephritis following acute infections surgical treatment has not come into vogue, probably because surgeons do not see many such cases. Operation is held to be indicated when anuria or uremia point toward an increase in intrarenal pressure. Pousson, in 1904, reported operations in 37 postscarlatinal cases, with 6 deaths. Since then nearly twice as many cases at least have been reported. Of course, nephrotomy in such cases is indicated when the presence of an abscess is suspected. When bacterial emboli cause diffuse infiltration or abscess formation, nephrotomy, always preceded by ureteral catheterization, is the operation of choice if the condition of the kidney does not demand its removal. Kümmell has reported 28 cases, 17 nephrectomies and 11 nephrotomies with only 3 deaths. Tenderness and muscular defense in these forms of nephritis are important signs.

The good effects of decapsulation in chronic nephritis are harder to explain. Experiments indicate that in certain cases collateral circulation may be established. That the consequent maintenance of function is at best a temporary one, may explain the conflicting reports. Clinically, improvement and recovery have been noted in many instances. Guiteras, in 1904, reported decapsulation in 120 cases of chronic nephritis, with clinical recovery in 16 per cent., improvement in 40 per cent., and death in 23 per cent. In Edebohls' 102 cases, reported in 1909, 49 patients died within five years, 33 were permanently cured, 11 improved, and 6 remained uninfluenced by operation. Kümmell, in 1912, reported 26 cases with definite improvement in 14. In general, it would seem that when long internal treatment shows slight or no improvement, or if the condition grows worse, decapsulation might be tried. Anuria and uremia in chronic nephritis, in the opinion of most authors, are favorably influenced by surgical treatment. Thus, Uteau found that, in 300 cases of anuria under various methods of treatment, 75 per cent. of the patients treated surgically before the fourth day and 58 per cent. so treated between the fourth and sixth day recovered. Decapsulation, usually unilateral, seems to be the operation of choice.

In renal hemorrhage, considered most commonly as caused by chronic nephritis, differential diagnosis is difficult. If conservative measures fail operation is indicated. While there is no agreement as to the operation of choice, nephrotomy is preferred, according to Ruge, when the diagnosis is in doubt. Kümmell has reported 16 cases, 4 nephrectomies, and 8 nephrotomies, and 4 decapsulations, with one death.

In the nephralgia of chronic nephritis, often combined with hemorrhage, other signs may be absent. The colic which is not at all characteristic is probably due to capsular compression of a swollen kidney. The diagnosis is usually established by exposure and section of the kidney with examination of the pelvis. Kümmel has reported 13 cases, 4 decapsulations and 9 nephrotomies, in 12 of which the patients afterward remained free from pain as long as observed.

From what has been said it appears that it is justifiable to center interest on this comparatively new field of surgery because it awakens hope of benefiting conditions which respond but little to internal treatment, and because of the light it throws on the pathology of nephritis.

DEFENDING THE GREAT AMERICAN FRAUD

Most of the fellows and members of the American Medical Association are aware of the fact that the Chattanooga Medicine Company and its chief owner, John A. Patten, manufacturers of Wine of Cardui, have sued (1) the American Medical Association and the editor of THE JOURNAL for $300,000, (2) Dr. Oscar Dowling, President of the Louisiana State Board of Health, for $25,000 and (3) *Harper's Weekly* for $200,000. Comparatively few realize, however, that the "patent medicine" interests of the country are spending money lavishly in a desperate effort to win a suit on whose outcome, they consider, depends the very life of the nostrum business. We have, at different times, given our readers an insight into some of the methods pursued in this case, especially in connection with the employment of detectives for the apparent purpose of manufacturing "evidence."

To refresh the memory it is but necessary to refer to the case of the Limestone County (Ala.) Medical Society.[1] There it was strongly intimated that not only the society, but also the individual members would be sued if the resolutions passed by the society condemning the methods of the Chattanooga Medicine Company were not rescinded. The episode of Detective Smith is also in point. A man who posed as a journalist called on Mr. Samuel Hopkins Adams in New York and on Dr. Bolduan of the New York Health Department. He professed to be seeking information for an article he wished to write to show how prohibition in the South was driving the people of that territory to use alcoholic "patent medicines." Smith came to Chicago and, giving as his references the names of Mr. Adams and Dr. Bolduan, attempted to get an interview with the member of THE JOURNAL staff who has charge of the Propaganda Department. Failing to get the interview he left town, stating that he could be reached by mail in Indianapolis, but actually going to Chattanooga. Then there was Barron, who posed as a "western business man" stopping in Chattanooga. It was he who assiduously cultivated the friendship and hospitality—later betraying them—of the Chattanooga pastor who lost his pastorate after he had dared lift his voice against the iniquity of the Wine of Cardui traffic.

But this by the way. The object of this comment is to call attention to an interesting article in the current (October 2) issue of *Harper's Weekly*, wherein are described the activities of some of the horde of detectives employed in this case. We suggest that physicians who have the interest of the public health and the medical profession at heart buy a copy of this week's *Harper's*. Under the title, "Patten in Pink Whiskers," the story gives in detail the experience of "Operative No. 48," a detective who threw up his job in disgust at the work he was expected to do for the "patent medicine" interests. How the private papers of the secretary of the Limestone County Medical Society were ransacked; how the minutes of that society were purloined and copied; how the Chattanooga pastor was dogged by detectives and private conversations taken down in shorthand by stenographers hidden from view—these are some of the things described by "Operative No. 48" in the *Harper* article. Read in connection with THE JOURNAL'S articles on the Wine of Cardui case,[1] it gives a very good idea of the methods to which the "patent medicine" interests will descend in their attempt to protect their noisome brood and to discredit the medical profession.

Those who in the past have built up huge fortunes by swindling the sick, sense the downfall of their business that is bound to follow the publicity that has been given it by the American Medical Association and other agencies. Really the Wine of Cardui cases are not simply "Chattanooga Medicine Company *vs.* The American Medical Association, Oscar Dowling and *Harper's Weekly;* they are "The Great American Fraud *vs.* The Medical Profession and the Public."

1. This matter and other articles on the Wine of Cardui case are reprinted in the pamphlet "Female-Weakness Cures and Allied Frauds," price 10 cents, published by the American Medical Association.

Current Comment

NEUTRALITY REGULATION DURING PREGNANCY

In a recent discussion of the subject of acidosis,[1] attention was called to the seemingly paradoxical statement that, despite the undue production of acid substances which goes on in certain disturbances of metabolism, of which diabetes is a classic example, the regulatory power of the organism nevertheless prevents any marked changes in the reaction of the circulating blood. Pregnancy furnishes a more physiologic instance of an acid-forming tendency provided by nature. It is attended by symptoms which are currently regarded as indicative of a degree of acidosis; and inasmuch as this ordinarily falls within the range of what may be regarded as a fairly normal function, the acidosis of pregnancy should afford an excellent opportunity to study the relative participation of the physiologic regulatory devices for preserving neutrality in the organism. These include, as we have pointed out before, an increased production of ammonia from protein products to neutralize the acid products, a decreased concentration of carbon dioxid in the blood (and alveolar air) owing to its displacement through the agency of the augmented acid; and an increased elimination of acid radicals by way of the kidneys. Which, if any, of these factors are brought into play under the conditions of pregnancy? Hasselbalch and Gammeltoft[2] of Copenhagen have carefully investigated this question by making comparisons of the various functions concerned in the same persons during and after pregnancy. It was found that the hydrogen ion concentration of the blood of gravid females is not different from that of other nongravid individuals of either sex. Whatever unusual production of acid may arise as the outcome of the pregnancy is evidently promptly taken care of by the regulatory mechanism. This is in part accomplished by the ammonia-producing activities, for the percentage output of ammonia in the urine is somewhat higher in the pregnancy period. More striking, however, is the decrease in the tension of carbon dioxid in the blood, which seems to serve in larger measure to prevent any rise in the true acidity. The increased genesis of acid substances, whatever they may be and however produced, is compensated by the expulsion of carbonic acid gas through the lungs and a resulting lower tension thereof in the blood. A fixed acid replaces one more readily expelled. Altered respiration plays a part in the process. The stability or

1. Acidosis and the Reaction of the Blood, editorial, THE JOURNAL A. M. A., Sept. 25, 1915, p. 1114.

2. Hasselbalch, K. A., and Gammeltoft, S. A.: Die Neutralitätsregulation des graviden Organismus, Biochem. Ztschr., 1915, lxviii, 20.

constancy of the reaction of the blood under conditions such as disease and pregnancy, which represent pronounced departures from the usual routine of acid formation in the body, is one of the most interesting facts of physiology. Highly sensitive tissues like the nervous structures are thus spared the irritation of even slight alterations of hydrogen ion concentration. Failure or insufficiency of the regulation brings severe manifestations of disease. This seems to be the case, according to a few experiences of the Danish investigators, in that puzzling condition described as eclampsia.

THE SURVIVAL OF BACILLUS BULGARICUS IN THE ALIMENTARY TRACT

One aim of the procedure which has somewhat tauntingly been termed the sour-milk therapy is to establish the predominance of organisms of the *Bacillus bulgaricus* type in those parts of the intestine in which the products of their activity will repress undesirable putrefactive changes in the alimentary contents. The group of organisms which includes the one specially recommended and found in fermented milk is distinguished by the ability of its members to grow in mediums containing considerable amounts of acid. In a widely quoted research, Herter and Kendall[1] found that by feeding a monkey for two weeks exclusively on milk fermented with *Bacillus bulgaricus* (but containing also some yeasts) it was possible to maintain an acid reaction throughout the digestive tract. The acid reaction was more pronounced above the ileocecal region than at this region or below it. The acidity decreased progressively from the ileocecal region to the anus. Lactic acid was detectable at every point in the digestive tract that was tested, the reaction growing less marked below the ileocecal region. Exclusive feeding for two weeks with milk fermented with *Bacillus bulgaricus* failed to establish the predominance of this organism in the ileocecal region or in the large intestine. In the latter situation, the number of bacilli of this type was relatively small and decreased toward the anus. Thus, in the regions characterized by most active putrefaction, the lactic acid bacilli failed to establish themselves in relatively large numbers. The experimental data in this field deserve considerable attention because of the widespread employment of these bacterial cultures along with the diet in American homes, either with or without the sanction of physicians. The latest of numerous contributions, by Dr. Alfred H. Rache[2] of the Cornell University Medical College in New York City, brings added evidence that the *Bacillus bulgaricus* cannot become adapted to the lower human intestine. It is still quite possible that such an organism might be able to adjust itself to the conditions prevailing in the duodenum and jejunum, but be unable to survive in the lower intestine, and thus be absent from the stools. A limited survival in the upper intestine of monkeys is apparently possible. This, however, does not adequately fulfil the foremost purpose of those who recommend its use to check the growth of putrefactive bacteria.

1. Herter, C. A., and Kendall, A. I.: An Observation on the Fate of B. Bulgaricus (in Bacillac) in the Digestive Tract of a Monkey, Jour. Biol. Chem., 1908, v, 293.
2. Rache, A. H.: A Study of the So-called Implantation of the Bacillus Bulgaricus; Jour. Infect. Dis., 1915, xvi, 210.

THE COLLAPSE IN DIPHTHERIA INTOXICATION

Recent investigations in which exact methods of observation have replaced the clinical guesses of an earlier period make it evident that the haphazard explanations of the circulatory failure and collapse so frequently encountered in diphtheria are not tenable. In so far as they merely charge the heart with some vague disturbance of function, these hypotheses have little in fact to support them. That the vasomotor center is not impaired in diphtheria intoxication may be taken as demonstrated.[1] Two important assumed causative factors are thus excluded. In the pharmacologic laboratory at the University and Bellevue Medical College, New York, Myers and Wallace[2] have examined the possibilities of involvement of tissues other than the heart or vasomotor center. The reactions of the larger blood vessels in intoxicated animals were found to respond to stimulation in essentially the same way as did the arteries of unpoisoned subjects. It may be concluded from this that neither the vasomotor mechanism nor the muscle tissue in the larger arteries is affected to an appreciable extent by the diphtheria toxin. The prominence of gastro-intestinal symptoms in animals poisoned with the products of the diphtheria bacillus and the pathologic picture of the small intestine directed attention to the possible involvement of this region. The intestinal epithelium shows early coagulation necrosis; in the liver the capillaries show a widespread destruction; there is marked congestion in the terminal arteries of other abdominal organs. Myers and Wallace emphasize the significance of these structural changes in the different organs and contend that the engorgement of the mesenteric vessels would offer a sufficient explanation for the low blood pressure. An examination of the intestine as an independent organ has shown, further, that its blood vessels fail to respond in the normal way to the stimulus of drugs like epinephrin, after the subject has been subjected to the intoxication. From such facts it is concluded that the chief factor concerned in the circulatory collapse in poisoning from the diphtheria toxin is the arteriole and capillary dilatation.

1. Porter, W. T., and Pratt, J. H.: The State of the Vasomotor Center in Diphtheria Intoxication, Am. Jour. Physiol., 1914, xxxiii, 431. The Nature of the Circulatory Collapse in Diphtheria Intoxication, Current Comment, THE JOURNAL A. M. A., July 4, 1914, p. 37.
2. Myers, H. B., and Wallace, G. B.: The Vascular Response in Poisoning from Diphtheria Toxin, Proc. Soc. Exper. Biol. and Med., 1914, xii, 43.

Breast Feeding.—Efforts to control the flow of milk which do not take into account the periodic character of its secretion are likely for the most part to end in failure. To this fact must be attributed much of the strength of a very widespread conviction that lactation is a most unreliable function. In the course of many observations from which these notes were constructed, no fact stood out with more prominence than the completely erroneous nature of this belief.—Harold K. Waller, M.B., *Jour. Obst. and Gynec., Brit. Emp.*, February, 1915.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Survey of Feebleminded of the State.—The Arkansas Commission for the Feebleminded has received notice from the Eugenics Record Office, Cold Spring Harbor, N. Y., that Dr. Harry W. Crane of that institution has been designated to carry on that part of the survey of the feebleminded in Arkansas, in which the Eugenics Record Office had previously agreed to assist. Dr. Crane arrived October 1 and began the study and classification of the inmates of the state charitable and penal institutions. The next work to be taken up will be a survey of the public schools to ascertain how many and what percentage of the children reported as backward are really mentally defective.

IDAHO

Medical Board to Meet.—The State Board of Medical Examiners will hold its next session in Wallace, October 5 and 6.

Personal.—Dr. George E. Hyde, formerly medical superintendent of the Idaho Insane Hospital, Blackfoot, has moved to Salt Lake City.——Dr. J. Eugene S. St. Jean, Wallace, had a narrow escape from injury when his automobile went over a 50-foot embankment at Mullan. He escaped, however, with only a bruise of the right knee.

Society News.—A medical society has been organized for the five counties of Twin Falls, Gooding, Lincoln, Minidoka and Cassia. At the meeting for organization at Twin Falls, the committee in charge was composed of Drs. Joseph Fremstad, Burley; Joseph N. Davis, Kimberly; and Drs. A. H. Dunn, Truman O. Boyd and Hubert W. Wilson, Twin Falls.——At the meeting of the Tri-County Medical Society for Blain, Gooding and Lincoln counties held in Hailey, recently, Dr. Simons, Wendell, was elected president; Dr. A. A. Higgs, Soldier, vice president, and Dr. Charles F. Zeller, Shoshone, secretary-treasurer.

ILLINOIS

Opening of Schools Postponed.—September 20, at DuQuoin, the opening of the schools was again postponed on account of the development of several new cases of diphtheria. The disease had prevailed for several weeks in the community and a number of deaths had occurred.

Foot and Mouth Disease.—LaSalle, Bureau and Putnam counties were placed under quarantine, September 25, on account of foot and mouth disease having been found in two herds in LaSalle County.——On account of the presence of foot and mouth disease on the Louis F. Swift farm in Lake County, the deer on this farm were killed, September 28.

Typhoid Fever.—Typhoid fever is reported to be epidemic in Menard County where 110 cases have been reported. The secretary of the State Board of Health has sent two of his assistants and three sanitary engineers to aid in the combat against the disease.——Dr. Patrick M. Kelly, superintendent of the Kankakee State Hospital, has ordered that all the employees and patients in the institution, nearly 4,000 in number, be inoculated against typhoid fever.

Personal.—Dr. John C. Foley and family, Waukegan, and Dr. and Mrs. John L. Taylor and family, Libertyville, returned from an automobile trip to the Pacific Coast and back, September 19.——Dr. John F. Bell, Elgin, was run down by a bicycle, September 15, and sustained severe bruises. ——Dr. George A. Zeller, Peoria, alienist of the State Board of Administration, has been appointed a member of the board. ——Dr. J. F. Echard, Streator, is reported to be seriously ill in the Streator Hospital with inflammation of the stomach and bowels.——Dr. Clarence A. Wells, Quincy, is made chief beneficiary of Mrs. Nellie A. Ward, deceased.——Dr. Harry L. Kampen has been elected president; Dr. Ralph Graham, vice president, and Dr. Charles P. Blair, secretary-treasurer, of the medical staff of the Monmouth Hospital.——Dr. Chester H. Latham, Pecatonica, who has been seriously ill in St. Anthony's Hospital, Rockford, is reported to be convalescent.

Chicago

Meeting of Society of Medical History.—The Chicago Society of Medical History will meet at the Hotel Sherman, Wednesday evening, October 13. Papers will be read by Dr. Fielding H. Garrison, Washington, D. C., and Dr. Arnold Klebs on Leonardo Da Vinci and Vesalius.

Personal.—Drs. Albrecht Heym, Sydney Kuh and George W. Hall have been appointed members of the attending staff of the Psychopathic Hospital, connected with Cook County Hospital.——Dr. I. N. Miller has moved to Kewanee, Ill.—— Dr. Evarts A. Graham, assistant professor of surgery at Rush Medical College, has located at Mason City, Iowa, and has been appointed chief surgeon to the Park Hospital.

INDIANA

New Hospital.—The board of commisioners of Sullivan county have voted to build a hospital in Sullivan.

State Society Meeting.—The Indiana State Medical Association met at the Claypool Hotel, Indianapolis, September 22-24, under the presidency of Dr. Frank B. Wynn, Indianapolis. The following officers were elected: Dr. George F. Keiper, Lafayette, president; Drs. Llon J. Willien, Terre Haute, Albert C. Chenoweth, Winchester, and Walter F. Carver, Albion, vice presidents; Dr. Charles N. Combs, Terre Haute, secretary (reelected) and treasurer. Dr. J. Rilus Eastman, Indianapolis and Dr. Albert E. Bulson, Jr., Fort Wayne, were elected delegates to the American Medical Association. Fort Wayne was selected as the next meeting place, the meeting to be held on the last Thursday and Friday in September, 1916.

Personal.—Dr. Cameron Chamberlin, Indianapolis, is reported to be in a critical condition in the Presbyterian Hospital, Chicago, as the result of a nervous collapse.—— Dr. Thomas C. Stunkard, Terre Haute, fractured his right arm above the wrist, while cranking his automobile, September 12.——Dr. Edmond J. Beardsley, Alexandria, was painfully injured September 9, by the fall of an iron awning which inflicted a severe scalp wound.——Dr. Lamar R. Knepple, Kokomo, was operated on in Good Samaritan Hospital in that city for appendicitis, August 31 and is doing well.——Dr. John P. Franz, Indianapolis, was painfully injured in an automobile collision during the past week.—— Dr. Harold O. Williams has been elected secretary of the Kendallville Board of Health in place of Dr. Albert G. Coyner, who had been secretary more than twenty years, but who died recently. Dr. Cyrus A. Gardener, Kendallville, has been named in place of Dr. Harold O. Williams on the board of health.

IOWA

Hospital for Cherokee.—At a public banquet held in Cherokee, September 10, it was decided to raise a fund of $50,000 for the erection of a hospital.

Nurses' Home for Hospital.—The Park Hospital, Mason City, has recently purchased for $15,000 a new building for a nurses' home adjoining the hospital.

Wishes to Be Medical Inspector.—Dr. Louis A. Thomas, Red Oak, formerly secretary of the State Board of Control, who has been conducting a health examination of school-children of Red Oak for the last three years, is said to be a candidate for the office of medical inspector of public schools of Des Moines.

Anthrax.—On September 16 it was reported that the danger of the spread of anthrax among cattle from the focus on a farm north of Muscatine had been overcome. The stock had all been given a second dose of a preventive vaccine by Dr. C. J. Hackett, the veterinarian in charge of the situation. The disease had caused the death of a number of cattle on the farm, but it was not allowed to extend to other farms.

Smallpox.—The smallpox which had prevailed at Davenport for the previous ten months was believed to have been eradicated, but the discovery of a case in the Madison School, September 20, by Dr. George M. Middleton, city physician, has again rendered the situation uncertain. A large number of pupils were exposed and radical measures have been taken to prevent the spread of the disease. Vaccination is still being urged.

Case Against Clinton Surgeon Dismissed.—The case of Joseph Knox, a mail carrier of Morrison, Ill., against Dr. David S. Fairchild, Jr., Clinton, in which the plaintiff claimed damages amounting to about $30,000 on the allegation that the Clinton surgeon, who had operated on him for kidney

disease, had left a gauze sponge in his body, was closed September 22, by this entry in the Clinton District Court docket: "The case of Knox vs. Fairchild, dismissed; judgment against plaintiff for costs." This entry justifies Dr. Fairchild's contention that the case was absolutely without merit.

Free Medical Service.—Dr. William S. Norton, Muscatine, physician of Muscatine county, has offered to conduct a free clinic on three days of each week for the benefit of the poor of the city. The clinics will be held between 9 and 10 on Monday, Wednesday and Friday mornings and will be open to all patients recommended by the City Welfare Association.——It is announced that free medical service will be at the disposal of the students of the State University, Iowa City, this year. Whenever a student becomes ill, he will be at liberty to visit the hospital or to call a university student, without expense.

Personal.—Dr. Wilton W. McCarthy, Des Moines, who suffered a fracture of the femur in an automobile accident near Ames, September 11, was operated on in Mercy Hospital, Des Moines, September 19.——Dr. Channing E. Dakin, Mason City, has been appointed head physician of the Modern Brotherhood of America, succeeding Dr. George E. Baudry, Atchison, Kan.——Dr. and Mrs. Henry Matthey, Davenport, sailed from Rotterdam for New York on the *Rotterdam*, September 8.——Drs. Fred W. Sallander, and Sidney Maldon, Iowa City, sailed from New York September 6 on the *Noordam*, for London, and expect to enter the military service.——Dr. Sidney G. Hands, Davenport, has been elected treasurer of Scott County Medical Society, succeeding Dr. Theo. W. Kemmerer, Davenport, resigned to accept the position of assistant professor of pathology in the University of Southern California, Los Angeles.

MARYLAND

Typhus in Baltimore.—A second case of typhus fever was reported from the Bayview Asylum, September 18. The patient, a white woman living in East Baltimore, was isolated.

New Laboratory.—Work has begun on the foundation for the five-story building of the Hunterian Laboratory connected with Johns Hopkins Medical School. The new building is located at the corner of Wolfe and Madison Streets, will be 50 by 100 feet, and will cost about $65,000.

Hunner Victor in Suit.—The suit of Mrs. Bertha Stephenson and her husband, Charles Stephenson of Ridgely, Caroline County, against Dr. Guy L. Hunner, Baltimore, to recover $30,000 damages for alleged negligence in the performance of a surgical operation on Mrs. Stephenson, was dismissed September 17, by Judge Soper in the Superior Court.

Hospital Force Organises for Defense.—The guards and other employees of the Springfield State Hospital have decided to form a provisional battalion for national defense at Sykesville. About sixty of the men are anxious to take the military training and the superintendent has arranged with the Adjutant General of the state to have a sergeant of the State Militia instruct the men at Springfield on alternate Saturdays.

Personal.—Dr. James M. H. Rowland, Baltimore, has been made a member of the Board of Regents of the University of Maryland, to succeed the late Dr. David Street. ——Dr. Fred P. Weltner has been selected to fill the vacancy on the medical staff of the Sheppard and Enoch Pratt Hospital, Baltimore, caused by the resignation of Dr. Burt J. Asper, who will practice in Asper, Pa.——Dr. Samuel J. Fort, Baltimore, has been appointed physician to the State Bureau of Statistics and Child Labor, succeeding Dr. John C. Travers, Baltimore.——Dr. William E. Moseley, Baltimore, was operated on at the Maryland General Hospital, September 16, and is reported to be improving.——Dr. Frederick C. Warring, Baltimore, who was operated on recently in the Maryland General Hospital, is reported to be convalescent ——Dr. John C. Pound, Baltimore, is reported to be ill with fever.——Dr. William B. Blanchard, chief of the resident staff of the Maryland General Hospital, has resigned.——Fire in the laboratory of Dr. Howard E. Ashbury, Baltimore, September 9, caused damage estimated at several thousand dollars.——Dr. John F. Spearman, formerly of Mercy Hospital, Baltimore, reports that he is on duty in a German line hospital and expects to return to New York in October.——Dr. J. McPherson Scott, Hagerstown, has been appointed chief surgeon of the local staff of the Western Maryland Railroad.——Dr. Herbert E. Zepp, Baltimore, charged with having failed to report five cases of typhoid fever to the Baltimore Health Department, was exonerated and the charge was dismissed as the cases were found to have been reported as required by law.

MINNESOTA

Sanatorium Site Selected.—A site has been chosen for the tuberculosis sanatorium for Roseau and Marshall counties at a point about 5 miles southwest of Holt.

New Hospital Opened.—The Physicians' Hospital, Thief River Falls, erected at a cost of $15,000, was formally opened August 31. The institution has accommodations for twenty-five patients and is provided with up-to-date equipment. The members of the staff are Drs. Herman W. Froehlich, Harvey G. Hieber, Francis H. Gambell, Oscar F. Mellby and Jesse E. Douglass.

Union of Health Bodies.—A movement for merger of the State Sanitary Conference and the Minnesota Public Health Association was begun September 2 at a meeting of the directors of the latter body at Millard Hall, University of Minnesota, at which resolutions expressing approval of the plan, were unanimously adopted. The merger of the two organizations cannot be effected until after January 1 next, on account of a provision in the charter of the conference.

MISSOURI

Physicians' Building.—Contracts have been let for the new physicians' and surgeons' building, three stories in height, to erected at Seventh and Francis streets, St. Joseph.

Hospital News.—A new staff of physicians has been appointed in the Kansas City General Hospital for the hospital and health board.——The Maywood Hospital, Sedalia, was transferred August 24 to the control of the Sisters of Charity of the Incarnate Word.——A meeting of the stockholders of the Southwest Hospital Association, Springfield, was held September 10, at which a proposition was submitted to increase the capital stock from $20,000 to $30,000.

Personal.—Dr. Leroi Beck, Kansas City, was seriously injured by the overturning of his automobile, September 4. ——Dr. Charles R. Woodson, St. Joseph, entertained the Buchanan County Medical Society at his sanatorium, September 2.——Dr. Clarence A. Revelle, police surgeon of Kansas City, was cut in the face and hands and bruised in a collision between a motor car and a jitney bus, September 2.——Dr. Clarence D. Ussher, formerly of Kansas City, but at present a medical missionary in Van, Turkish Armenia, is reported to be seriously ill.

Plan to Eliminate School Infections.—Dr. Paul Paquin, health director of Kansas City, has a plan which if adopted he believes will eliminate the spread of infectious diseases due to school contact. It is a modification of the course pursued in many schools at present, but is more thorough and lays greater stress on frequent or constant inspections, etc. The plan provides for the examination of all pupils before admission; frequent examinations by nurses and physicians at school; the teaching of hygiene in every school; work by nurses in the homes; the creation of student sanitary commissions to aid the work. It is estimated that the cost in Kansas City would be about $25,000 a year. The school board is said to be favorable to the plan, provided the money can be obtained.

NEW JERSEY

Hudson County Bacteriologic Laboratory.—A county bacteriologic laboratory has been established in Jersey City under the direction of Dr. Von der Leit.

Typhoid Vaccination for Sailors.—Health Commissioner Joseph F. X. Stack, Hoboken, has administered antityphoid serum to the 2,500 sailors on the German steamers interned in Hoboken.

Bitten by a Dog.—John Kennell, health commissioner of Passaic and president of the Society for the Prevention of Cruelty to Animals was bitten by a dog that was thought to have rabies.

Old Health Officer Employee Dies.—Joseph C. Sayres, aged 70 years, a member and secretary of the Rutherford Board of Health for twenty-nine years, died at his home, September 16.

Health Officer Need Not Be Physician.—At the request of members of the Board of Health of Newark, the examination for health officer of that city, which was held September 23, was thrown open to candidates not practitioners of medicine.

Personal.—Dr. Fred M. Corwin has been reappointed medical inspector of the public schools of Bayonne.——Dr. Charles S. Pancoast, Camden, is said to have been presented with a decoration on account of distinguished service performed by him in Hungary.——Dr. Frederick C. Burt, who has served two terms as mayor of Hammonton, has refused to accept renomination.

NEW MEXICO

Personal.—Dr. Thomas J. Cummins has been appointed medical director of St. Joseph's Sanatorium, Silver City.

New Health Slogan.—The secretary of the Commercial Club of Albuquerque has originated a new slogan for that town which is as follows: "Albuquerque, N. M., the town where the sick get well and the well get prosperous."

State Society Meeting.—The thirty-fourth annual session of the New Mexico Medical Society was held in East Las Vegas, September 6 to 8, under the presidency of Dr. William T. Joyner, Roswell, the subject of whose annual address was "Medical Organization and Public Health." Albuquerque was selected as the place of meeting for next year and the following officers were elected: president, Dr. Evelyn F. Frisbie, Albuquerque; vice presidents, Drs. Clifford S. Losey, East Las Vegas; John W. Kinsinger, Roswell, and Arthur H. DeLong, Gallup; secretary, Dr. Robert E. McBride, Las Cruces (reelected); and treasurer, Dr. Frank E. Tull, Albuquerque (reelected).

NEW YORK

Hospital Remembered in Physician's Will.—According to the terms of the will of the late Dr. Joseph L. Hicks, Flushing, all his surgical instruments, and the books and pamphlets in his medical library, are bequeathed to the Flushing Hospital.

Health Officers Removed.—The State Commissioner of Health, Dr. Hermann M. Biggs, announced the removal of Dr. Emerick W. Crispell, Williamstown, health officer for the township of Amboy, and Dr. William B. Acker, health officer for the town and village of Hannibal. Dr. Biggs had accorded hearings to these gentlemen on the charges of incompetence and negligence which had been filed against them, but neither of the accused officers appeared to answer to the charges.

Personal.—Dr. Oliver W. H. Mitchell has been reinstated as city bacteriologist of Syracuse.——Dr. Howard L. Van Winkle, who has been in charge of the Syracuse Laboratory, has resigned as first assistant city bacteriologist.——Drs. William J. Books, New York City, and James N. Dunn, Schenectady, and six nurses have assumed charge of the medical inspection of the children in the city schools of Schenectady.——Dr. Ida C. Benner, for twenty years supervisor of the primary grades of the schools of the city of Buffalo, has resigned.——Dr. Loring T. Swaim, orthopedist of the Clifton Springs Sanatorium, has resigned and will practice in New York City.——Dr. William J. Thompson of the staff of the Central Islip Hospital has been appointed senior physician to the Danvers, Mass., State Hospital.

Mohansic Sewage Disposal Plan Opposed.—Some time since the Mohansic State Hospital secured the opinion of Dr. Hermann M. Biggs, State Commissioner of Health, that the temporary drainage of the affluent from the sewage disposal plant of the hospital into a lake from which a part of the water supply of New York City was obtained would not be objectionable. The matter was referred to the Department of Water Supply, Gas and Electricity of the City of New York which, after investigation, seriously opposed the plan. The committee then referred the matter to the Committee on Public Health of the New York Academy of Medicine. This committee also fails to concur with Dr. Biggs, giving as its reasons that there is a marked difference of opinion among sanitary experts whether the method of treatment which is proposed renders such sewage harmless and therefore they are not at all convinced that the proposition lacks danger even though it is only a temporary provision. They further state that although this plan of disposal might be safe under the present administration of the State Department of Health, there is no guarantee that in the future it might not be most unsafe through faulty administration and inefficient supervision. They suggest that as disposal of this sewage into the Hudson River would cost the state but $120,000, the State Department of Health should urge this expenditure as preventing all possible further pollution of the Croton water supply from this source.

New York City

Personal.—Dr. and Mrs. George S. Murray have sailed for Liverpool.——Dr. William P. Strain of Far Rockaway recently sustained a fracture of the forearm.——Dr. Charles F. Pabst, Brooklyn, saved a woman from drowning at Patchogue, N. Y., August 26.——Dr. Elizabeth J. Van Slyke, who has been serving with the American Red Cross at France and Belgium, arrived in New York on the *Santa Anna*, September 1.

Successful Control of Rabies.—The Department of Health announces that the measures adopted last year for the control of rabies in this city have been successful, largely through the ordinance requiring the muzzling of dogs. The number of cases of rabies found in animals examined in the laboratories of the department decreased from sixty-four during the second quarter of 1914 to fifteen during the corresponding period of this year. There was a reduction of 267 in the number of persons examined for dog bite and of 282 in the number of dogs examined for rabies.

Find Medical Care of Schoolchildren Inadequate.—The Bureau of Welfare of Schoolchildren of the New York Association for Improving the Condition of the Poor, of which William D. Straight is chairman, has issued a statement derived from the study of health department statistics, which indicates that 695,600 of the 925,000 schoolchildren of New York City, or 75.2 per cent. of all schoolchildren, are in need of medical attention for one or more of the physical defects common to children. Owing to the inadequacy of the staff of doctors assigned to school inspection and examination of children only 33 per cent. of the children are given a thorough physical examination each year. The statement points out that 167,577 children failed of promotion and assuming that this failure in a certain proportion of the children was due to the handicap imposed by one or more physical defects, the question is shown to have a serious financial side, since in addition to the amount expended by the health department it would cost the city $2,898,000 to reeducate this group of children who failed to advance.

NORTH CAROLINA

Third Antityphoid Campaign Opened.—The third antityphoid campaign to be inaugurated in North Carolina by the State Board of Health began in Craven and Warren counties, September 13. The county physician and a representative from the State Board of Health is in charge of the campaign in each county.

Examination Hours Restricted.—The State Board of Health has issued a notice that examinations for admission to the State Sanatorium for the Treatment of Tuberculosis, will be made only in the morning hours of the day, and patients are requested to communicate with the sanatorium and make appointments for such examinations.

Hospital Addition.—The addition to the Mission Hospital, Asheville, is almost completed and will be ready for occupancy by November 1. The addition is three stories and basement in height, fireproof and contains thirty-three rooms, of which thirty-one are to be utilized for patients. When the new building is in service, the hospital will have accommodations for forty-five private patients and thirty-six ward patients.

Bulletin for Teachers.—In connection with the State Department of Education, the North Carolina Board of Health is preparing to bring the subjects of health, disease prevention, and sanitation more closely to the attention of the public school teachers and public schoolchildren of the state. A bulletin is being prepared for the use of teachers which will contain the material for three-minute health talks, and may be used as a supplemental course in physiology, sanitation, and hygiene.

Registering Nurses and Cooks.—A number of cities and towns in the state have passed ordinances providing for the registering of washerwomen. The ordinance demands that they shall have certificates of good health and shall furnish sanitary premises and utensils for doing their work. In a *Bulletin of the State Board of Health* it is said that householders have protested that this ordinance is too narrow, and that it should include nurses and cooks, as they are even more important as disease-spreading factors. An instance is cited of one householder who reported that of three servants employed two were found to have tuberculosis and another a "worse disease." Each had succeeded in keeping the symptoms concealed for a time. The extension of protective ordinances to this class of help is advocated.

PENNSYLVANIA

Municipal Sanatorium Opened.—The new municipal tuberculosis sanatorium for Pittsburgh on the Leech farm, opposite Highland Park, is almost ready to receive patients. The institution has accommodation for 125 patients and several hundred applications for admission are already on file.

Hospital Notes.—Ground has been broken for the additional wing to the Braddock General Hospital to cost $80,000. When finished this will double the capacity of the hospital which now can accommodate seventy patients.——A new operating room, built and equipped at a cost of $40,000, was opened in the McKeesport Hospital, September 16.

New Cases of Typhoid at Danville.—Six new cases of typhoid were reported at Danville, September 22, bringing the total to sixty-nine. Five also have been reported in Mahoning township adjoining the borough, and six from Riverside. Two deaths were reported in the Danville State Hospital for the Insane, bringing the number up to eleven, but no new cases developed beyond the 133 already reported, which adds to the strength of the belief that the epidemic has been controlled through immunizing vaccination.

Personal.—Dr. Clinton T. Saylor, Rockwood, is reported to be seriously ill with appendicitis in the Memorial Hospital, Johnstown.——As the result of a civil service examination recently held in Illinois, to select a state psychologist, Dr. Harrison L. Harley, state college, headed the list and has taken up his duties at the Lincoln State School and Colony. ——Dr. Thomas McC. Maxwell, Butler, was painfully injured in an automobile accident, September 16.——Dr. Jacob D. Liebermann, West Grove, is reported to be in a critical condition from septicemia.——Dr. Charles J. Hunt, Harrisburg, has been appointed a member of the staff of the Clifton Springs (N. Y.) Sanitarium.——Dr. James L. Yagle, New Freedom, was run over by his automobile, September 3, but was not seriously injured.——Dr. John J. Ott, Pleasant Valley, is reported to be seriously ill with heart disease at Applebauchville.——Dr. J. Frank Small, York, celebrated the twenty-fifth anniversary of his entrance into the practice of medicine, his retirement from practice and his fiftieth birthday, at his country home, south of York, by entertaining the York County Medical Society at dinner. Dr. Small was presented with a solid mahogany silver-headed cane, appropriately engraved.

State Society Elects Officers.—At the annual meeting of the Medical Society of the State of Pennsylvania held in Philadelphia, September 20-24, the following officers were elected: Dr. Charles A. E. Codman, Philadelphia, president; Drs. J. Torrance Rugh, Philadelphia; Edgar M. Green, Easton; W. Albert Nason, Roaring Spring, and Meyers W. Horner, Mt. Pleasant, vice presidents; Dr. Cyrus Lee Stevens, Athens, secretary (reelected); Dr. Clarence P. Franklin, Philadelphia, assistant secretary; Dr. George W. Wagoner, Johnstown, treasurer; Drs. Irwin J. Moyer, Pittsburgh; James Johnston, Bradford; John B. Lowman, Johnstown, and Jay B. F. Wyant, Kittanning, trustees and councilors; delegates to the American Medical Association, Drs. Americus R. Allen, Carlisle; William F. Bacon, York; Wilmer Krusen, Philadelphia; Charles C. Strickland, Erie, and Frederick L. Van Sickle, Olyphant; and alternates, Drs. Theodore B. Appel, Lancaster; Herbert B. Gibby, Pittston; George G. Harman, Huntingdon; Warren F. Klein, Lebanon; John A. Hawkins, Pittsburgh; Alice M. Seabrook, Philadelphia; Albert R. Matheny, Pittsburgh; William P. Walker, South Bethlehem; Robert B. Watson, Lock Haven, and Charles W. Youngman, Williamsport.

Philadelphia

Ground Broken for Hospital.—Ground has been broken for the erection of a three-story prison hospital for Moyamensing Prison, at the corner of Reed Street and Passyunk Avenue. It will be of granite, 36 by 43.5 feet, and will cost $18,000.

New Wards at the Polyclinic Hospital.—The Augusta Caroline Thorn Wards, presented to the Polyclinic Hospital by her daughter, Miss Mary Thorn, were opened at the hospital, September 22. The wards, which have accommodation for forty patients, cost $7,000. There are five rooms in all, designated as follows: women's surgical ward, women's medical ward, women's private ward, recovery ward, and the serious case ward.

To Raise Fund for the Children's Hospital.—Within a few days the board of managers of the Children's Hospital will announce the opening of a campaign to raise $500,000 to aid in completing the group of buildings for the site at Eighteenth and Bainbridge streets. One building is already finished and if the campaign is successful, plans for the main hospital building will be completed at once. Necessity for this work is emphasized by the fact that while there are in Philadelphia at the present time approximately 350,000 children less than 12 years old, the total hospital accommodation for such children is less than 900 beds.

Medical Institutions About Philadelphia.—Philadelphians will give a modern hospital to the State Masonic Home, Elizabeth, Pa. The building, for which architects are now preparing plans, is to be three stories high, of stone construction and 35 by 100 feet.——Title has been taken by the Orthopedic Hospital to the Parish House at the coroner of Seventeenth and Summer streets, from the Protestant Episcopal Church of St. Luke and the Epiphany for $40,000. The building will be used as a dispensary.

Personal.—Dr. Michael G. Wohl, pathologist to the Samaritan and Howard hospitals, has left Philadelphia to take charge of the laboratory of the Nicholas Senn Hospital, Omaha.——Dr. and Mrs. W. B. Dixon, Frankford, celebrated the sixty-fifth anniversary of their wedding, September 11.——Dr. Luther C. Peter has been elected associate professor of diseases of the eye in the Philadelphia Polyclinic.——Dr. J. William White returned home September 2 after two months of service in the American Ambulance, near Paris.——Dr. J. B. Frame has sailed for Persia as a medical missionary of the Presbyterian Board of Foreign Missions. ——Dr. Malcolm C. Grow sailed from New York, September 12, on the steamship *Dvinsk* to serve in a Russian military hospital.

CANADA

A Doctor's Exciting Experiences.—Dr. W. V. Sargant has arrived home in Kingston, Ont., after a lively seven weeks. The government transport on which he went to England early in August was chased by a submarine, and he sailed for home as medical attendant on the S. S. *Hesperian*, which was torpedoed and sunk.

Toronto Physician Returns from Serbia.—Dr. James K. Mossman, Parry Sound, has returned from Serbia, suffering from septicemia contracted by cutting his finger during an operation. Before he went to Serbia 131 doctors in the whole empire out of 300 had succumbed to typhus fever. Dr. Mossman had charge of 300 patients and there were altogether over 4,000 patients with the disease in the town where he was stationed. There were not nearly enough doctors in that country to look after the wounded. A French commission was sent out in the spring which vaccinated all the people in the kingdom both civil and military against smallpox and cholera.

University News.—Queen's medical faculty is hoping the British War Office may see its way clear to allow Lieut.-Colonel Walter T. Connell, M.D., professor of bacteriology and public medicine, who is at present with Queen's Stationary Hospital at Cairo, Egypt, to return to Kingston for the work of the coming session. It has been found impossible to secure a competent supply to fill his position. Twelve of the third and fourth year medical students in France and in England are expected to return for the session's work. ——Nearly one third of the doctors on the medical faculty of the University of Toronto will be missed when the term opens on September 28. Of the staff of 197 professors and lecturers forty-three went to the front with the University Base Hospital. Dean Clarke states that the medical faculty will probably have as many students this year as last year in spite of the large numbers who have enlisted.

Hospital News.—Members of the different faculties of Laval University, Montreal, met last week in special convention, called by the special committee in charge of the scientific organization of the Laval University Stationary Hospital, and passed the following resolution: "We learn with pleasure of the initiative of the Faculty of Medicine in organizing the Laval Stationary Hospital."——Dr. James C. Connell, dean of the Medical Faculty of Queen's University, Kingston, says that the Egyptian authorities declare that Queen's Stationary Hospital, established at Cairo, Egypt, is the best equipped hospital that has arrived there from France or Britain. It is the only hospital there with a laboratory and an expert pathologist. There are

480 beds in the hospital.——The Ontario Military Hospital being established at Orpington, in the county of Kent, England, under the supervision of the Hon. Dr. Robert A. Pyne, Toronto, has grounds comprising 27½ acres. It has a large dwelling house capable of accommodating a considerable portion of the staff, and Dr. Pyne is proceeding with the erection of temporary buildings to house the hospital. The buildings will accommodate 1,040 patients as well as a number of assistants. They are being erected on lines approved by the British War Office and under the direction of an architect who has had wide experience in construction of that kind, having built several of the British war hospitals. The work will be pushed forward as rapidly as possible. The institution will be known as the Ontario Military Hospital, and Dr. Pyne is remaining in England for the present to personally oversee the erection and equipment of the hospital.

Personal.—Dr. Alfred K. Haywood, assistant superintendent of the Toronto General Hospital, who has been home on sick leave, leaves for his duties in Northern France, October 2.——Lieut.-Col. Ernest C. Ashton, M.D., Brantford, Ont., has been promoted to the rank of brigadier-general.——Dr. James P. Rankin, Stratford, Ont., has been successful in qualifying for the rank of lieutenant-colonel in the Canadian Army Medical Corps.——Dr. Arthur M. Fisher, Woodstock, N. B., and Dr. Lorne deC. MacIntosh, Hartland, N. B., who recently joined the R. A. M. C., have gone to Egypt.——Dr. William D. Sharpe, Brampton, Ont., has been appointed to the staff of a hospital in Serbia.——Dr. George H. Bowlby, Berlin, Ont., has left for overseas service.——Dr. Charles Valery, Edmonton, Alberta, has been appointed chief of the medical service of the fifty-ninth division of the French army.——Among Toronto physicians taking training in the provisional school of instruction for officers of the Army Medical Corps at Niagara-on-the-Lake are: Drs. Frederick A. Cleland, George D. Carleton, Hector C. Hall, B. P. Matthews, W. J. Naber, James M. McCormack, McKilgow, Robert W. Phillips, W. M. Robb, Harold P. Rogers, S. O. Rogers, F. G. Thompson, F. G. Wonbridge and C. R. Young. Other medical men taking this course are J. A. McCampbell, Waubashene, Ont.; Frederick A. Ross and W. A. Lewis, Barrie; George T. Bailey, Cochrane; W. J. Kirby, Englehart; H. H. Harrier, Coldwater; Herbert W. Armstrong, Fergus; D. M. Baker, Toronto; John P. Russells, Cobalt; Lyman C. Lauchand, Dundas; James R. McLean, Salt Ste. Marie; Thomas A. Gourley, Cayuga; F. J. Matthews, Brooklyn, N. Y.

GENERAL

Mississippi Valley Medical Association Meeting.—The forty-ninth annual meeting of the Mississippi Valley Medical Association will be held at the Phoenix Hotel, Lexington, Ky., October 19 to 21, under the presidency of Dr. Hugh Cabot, Boston. Dr. Carl Lewis Wheeler is chairman of the committee on arrangements.

Tuberculosis Week.—Philip Jacobs of New York, on behalf of the National Association for the Study and Prevention of Tuberculosis, announces that tuberculosis week has been arranged from December 6 to December 12. On December 8 a nation-wide plea is to be issued for every citizen of the United States to go to a physician to be examined for tuberculosis. December 10 is to be known as Children's Health Crusade Day.

Obstetricians and Gynecologists Elect Officers.—At the twenty-eighth annual meeting of the American Association of Obstetricians and Gynecologists held in Pittsburgh, September 14 to 16, the following officers were elected: president, Dr. Hugo O. Pantzer, Indianapolis; vice presidents, Drs. Gordon K. Dickinson, Jersey City, N. J., and O. G. Pfaff, Indianapolis; secretary, Dr. E. Gustav Zinke, Cincinnati (reelected); and treasurer, Dr. Herman E. Hayd, Buffalo. Indianapolis was selected as the place of meeting for 1916.

Prevention of Infant Mortality.—The sixth annual meeting of the American Association for Study and Prevention of Infant Mortality will be held in Philadelphia, November 10-12. The subjects to be discussed include Eugenics; Effect of the Economic Standing of the Family on Infant Mortality; Infant Welfare Nursing in Small Cities, Towns and Rural Districts; Institutional Mortality; Midwifery Conditions, and Treatment and Prevention of Respiratory Diseases. The session on Economic Aspects of Infant Welfare will be a joint one with the Philadelphia Medical Society, and will be held at the College of Physicians, November 11.

Health Experts Elect Officers.—At the close of the meeting of the American Public Health Association in Rochester, N. Y., September 10, the following officers were elected: president, Surg. John F. Anderson, U. S. P. H. S., Washington, D. C.; vice presidents, Drs. George W. Goler, Rochester, N. Y.; Charles J. C. O. Hastings, Toronto, Ontario, and Omer R. Gillett, Colorado Springs, Colo.; secretary, Prof. Selskar M. Gunn, Boston, and treasurer, Lee K. Frankel, New York City. Maj. Gen. William C. Gorgas, Surgeon-General, U. S. Army; Dr. C. Stephen Smith, New York City; Dr. Henry D. Holton, Battleboro, Vt., and Dr. Frederick Montizambert, director-general of public health of the Dominion of Canada, Ottawa, were elected honorary members.

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, Philadelphia, $10,000 by the will of August B. Loeb.

Episcopal Hospital, Philadelphia, and Emergency Hospital, Easton, Pa., each $1,000 by the will of Elizabeth Bartlett.

Salem (Mass.) Hospital, $5,000 to maintain a child's free bed to be known as the Arthur Curwin Davis free bed and to provide an appropriation for James B. Curwin, first president of the hospital; and one third of the residue of the estate after the payment of bequests, to the Massachusetts General Hospital, Boston, by the will of Caroline E. Davis.

Masonic Home, Charlestown, Mass., $10,000; Home for Incurables, Boston, Boston Floating Hospital, and Industrial School for Crippled and Deformed Children, each $5,000 by the will of Isaac Eddy, Dorchester, Boston.

Cleveland Medical Library, a maintenance fund of $200,000 by the will of Dr. Dudley P. Allen. The fund is left in trust with the Cleveland Trust Company, the principal to remain intact and the net income is to be turned over to the Association for the next hundred years, or as much longer as the library is efficiently maintained.

To aid in the fight against tuberculosis in Dallas, Tex., a donation of $1,000 by P. P. Martinez.

New York Throat, Nose and Lung Hospital, and New York Association for the Blind, each $5,000 by the will of Francis Finch Robins.

Harvey Society.—The program of the eleventh lecture course of the Harvey Society has just been published. The lectures will be given on Saturday evenings at 8:30, under the patronage of the New York Academy of Medicine, at its building at 17 West Forty-Third Street, New York. The program is as follows:

October 16.—Prof. C. W. Stiles, Hygienic Laboratory, Washington, D. C. "Recent Studies on Schoolchildren, with Special Reference to Hookworm Disease and Sanitation."

November 6.—Prof. A. J. Carlson, University of Chicago. "Recent Contributions to the Physiology of the Stomach."

November 27.—Dr. Eugene F. Du Bois, Cornell University. "The Respiration Calorimeter in Clinical Medicine."

December 18.—Prof. Florence R. Sabin, Johns Hopkins University. "The Method of Growth of the Lymphatic System."

January 15.—Dr. Donald D. Van Slyke, The Rockefeller Institute for Medical Research. "The Present Significance of the Amino Acids in Physiology and Pathology."

February 5.—Dr. Hideyo Noguchi, The Rockefeller Institute for Medical Research. "Spirochetes."

February 26.—Prof. Warfield T. Longcope, Columbia University. "The Susceptibility of Man to Foreign Proteins."

March 11.—Prof. Henry A. Christian, Harvard University. "Some Phases of the Nephritis Problem."

March 25.—Dr. R. T. Woodyatt, University of Chicago. "A Conception of Diabetes."

April 8.—Prof. Stanley R. Benedict, Cornell University. "Uric Acid in Its Relations to Metabolism."

April 29.—Prof. William H. Welch, Johns Hopkins University. "Medical Education in the United States."

The Plague Situation in New Orleans.—After a lapse of nearly a year a case of human plague occurred in the city of New Orleans, August 27. This case was confirmed as true bubonic plague on September 8. The epidemiologic investigations as to the exact source of the infection have not yet been completed but it is believed that it was probably received in the city of New Orleans. The occurrence of this case demonstrates the difficulties surrounding the eradication of the disease and indicate that had it not been for the active cooperative efforts of the United States Public Health Service and of the departments of health of the state of Louisiana and the city of New Orleans, the outbreak would have reached greater proportions and would have been longer continued. It also points out to other cities the necessity for ridding themselves of the rodent carriers of the disease and of thoroughly rat proofing all of their buildings. No fear is felt that this case will be followed by an outbreak. Officers and men of the Public Health Service, well trained in the control of the disease, are on the ground and with the health authorities of the city of New Orleans are taking every precaution to prevent the spread of the disease from the city

and within it. During the three months from July 17 to September 18, the United States Public Health Service, in its work against bubonic plague in New Orleans, fumigated 118 vessels with sulphur, 144 with carbon monoxid and 15 with hydrocyanic acid gas; and issued 345 clean bills of health and 54 foul bills of health. In the department of field operations 56,233 rats were trapped, 101,226 premises were inspected and 7,281 buildings were rat proofed. The department of laboratory operations received 7,281 specimens of mus rattus; 13,988 of mus Norvegicus; 1,090 of mus Alexandrinus; 38,915 of mus musculus; 466 wood rats, 308 musk rats and 842 putrid rats. In all, 56,160 rats were received at the laboratory. Of these, 18,605 were examined, 169 were found suspicious and in 7 rats the diagnosis of plague was confirmed. The confirmed rodent cases were as follows: No. 245, captured at 617 St. Marys Street, July 7, diagnosis confirmed July 14, premises treated by intensive trapping, premises vacated and demolished and rat proofing initiated; No. 246, captured at Galves and Erato streets, July 13, diagnosis confirmed July 20, and premises treated with intensive trapping in the neighborhood and on the Galves dump and pushing forward of the rat-proofing operations; No. 247, captured at 536 S. Roman Street, August 1, diagnosis confirmed August 8, premises treated by intensive trapping, destruction of rat harbors, spraying of the premises with pulecide and the completion of rat proofing; No. 248, captured at 2503 Howard Street, August 17, diagnosis confirmed August 25, and the premises treated by intensive trapping, destruction of rat harbors, premises sprayed with pulecide and rat proofing expedited; No. 249, captured at Harmony Street Wharf, August 19, diagnosis confirmed September 2, and premises treated by intensive trapping; No. 250, captured at 1423 Joseph Street, September 6, diagnosis confirmed September 12, premises treated by summary destruction of rat harbors, spraying of pulecide in the vicinity, intensive trapping and rat proofing, and No. 251, captured at 837 S. Fulton Street, September 9, diagnosis confirmed September 14, premises treated by intensive trapping, fumigation by cyanid gas and rat proofing. During the week ended July 24, one suspicious human case was inspected and another during the week ended August 28, and one human plague case was discovered as reported above. Since the initiation of the work against plague in New Orleans, 44,938 buildings have been rat proofed, and 442,497 rodents have been captured, of which 286,087 were examined. Rodent plague was found in 4 cases in mus musculus, in 17 cases in mus rattus, in 8 cases in mus Alexandrinus, and in 222 cases in mus Norvegicus.

Annual Report of Rockefeller Foundation.—The first part of the annual report of the Rockefeller Foundation, covering the period to the end of 1914, deals with the activities of the international health commission. This commission was established June 27, 1913. Mr. Wickliffe Rose, administrative secretary of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, was appointed director-general; Dr. John A. Ferrell, assistant director-general, the president and secretary of the organization serving ex-officio as chairman and recording secretary, respectively. The commission had assigned to it, two tasks: to extend to other countries the work of eradicating hookworm disease, and to follow up as far as practicable, the treatment and cure of this disease, together with the establishment of agencies for the promotion of public sanitation and the spread of the knowledge of scientific medicine. The hookworm infection includes practically all countries within the zone from 36 North to 30 South latitude and about 900,000,000 of the 1,600,000,000 inhabitants of the globe live in countries where the infection is prevalent. In the southern states, 39 per cent. of the 548,992 rural children microscopically examined were found to be infected; 90 per cent. of the population of the United States of Colombia, living between sea level and a latitude of 3,000 feet are infected; 50 per cent. of the population of British Guiana is infected; 90 per cent. of the population of Dutch Guiana; 50 per cent. of the laboring population of Egypt; 50 per cent. of the coolies in Natal and 90 per cent. among the plantation laborers in Ceylon are victims of the disease, and in some parts of India and among the coolies on the estates in Malaysia and Fiji which import their laborers from India there is a large percentage of infection. The southern two-thirds of the Chinese empire is infected, the infection of the farm population in the Yangtse Valley running as high as 76 per cent. The relief and control of the disease involve first a survey to determine the geographic distribution and approximate degree of infection; the microscopic inspection of the people and the cure of the infection, and the setting in operation and making effective such sanitary measures as will stop soil pollution. During the first year of the existence of the commission, trips for preliminary examination and conference were made to England, the British West Indies, Egypt and the British dependencies in the Far East and to Central America. As a consequence of these visits, work has begun in British Guiana, Antigua, Trinidad, St. Lucia, Grenada, Egypt, Ceylon, the Malay states, Panama, Nicaragua, Costa Rica and Guatemala. In addition to this work in foreign countries, the commission has also undertaken to complete the program of the Rockefeller Sanitary Commission for the eradication of uncinariasis in the southern states. The methods pursued include work under authority and direction of the government which was begun on a small scale; the treatment of those found infected; a survey of the geographic distribution of the infection; preventive measures and education of the people, the whole being designed as an object lesson in the treatment of disease, demonstrating that as one disease has been conquered others may be.

FOREIGN

Death of Professor Ewald.—Carl Anton Ewald's name fills a prominent place in textbooks on diseases of the digestive tract, as he has contributed much to the diagnosis, differentiation and management of stomach affections. He was born at Berlin, Oct. 30, 1845, and had thus nearly completed his seventieth year. He was one of the two editors of the *Berliner klinische Wochenschrift* until he resigned this task in 1907. He was the successor of Senator in the internal medicine service at the Augusta Hospital, and has served constantly since 1886. Besides numerous works on the pathology of the digestive organs, the Ewald-Boas test breakfast, the Ewald test meal, his stomach tube, and the Ewald-Boas method of expelling the gastric contents through the stomach tube, his name is connected with Sievers' in a clinical test of the motor functioning of the stomach. Before his last long illness, Ewald had taken an active part in sanitary organization, especially in establishing seaside homes for weakly children, and was appointed regular Honorarprofessor in 1908. He has been privy councilor, Geh. Med.-Rat, since 1898. The cable announces his death September 25.

WAR NOTES

Medical and Surgical Exports Increased by War.—The manufacture, in the United States, of drugs, surgical instruments and other medical appliances represented—as long ago as 1909—an approximate aggregate production of $165,000,000. Ordinarily, the total export of this material averages 10 per cent. The following table taken from *Commerce Reports*, July 19, illustrates the rapid growth of export trade in such materials in a single year, obviously due to the international conflict raging in Europe:

Articles	Year ending June 30 1914	1915
Surgical appliances	$ 1,289,000	$ 4,500,000
Medical and surgical instruments	200,000	300,000
Dental goods	2,679,000	1,274,000
Patent or proprietary medicines	6,722,000	7,200,000
Miscellaneous drugs, chiefly disinfectants	9,020,000	22,500,000
Total	$19,916,000	$35,774,000

Aid for Belgian Physicians.—The report of the treasurer of the committee of American physicians for the aid of the Belgian profession, for the week ended Sept. 24, 1915, lists the following contributions:

Norfolk County Medical Society, Norfolk, Va.	$ 28.00
Carroll County Medical Society, Wolfeboro, N. H.	10.00
Muscogee County Medical Society, Columbus, Ga.	14.00
Receipts for the week ending September 25	$ 52.00
Previously reported receipts	7,814.84
Total receipts	$7,866.84
Previously reported disbursements:	
1,625 standard boxes of food at $2.20	$3,575.00
1,274 standard boxes of food at 2.30	2,930.20
353 standard boxes of food at 2.28	804.84
Total disbursements	7,310.04
Balance	$ 556.80

F. F. SIMPSON, M.D., Treasurer,
5 Jenkins Arcade Bldg., Pittsburgh.

LONDON LETTER

London, Sept. 17, 1915.

The War

THE DEARTH OF PHYSICIANS: NEW SCHEME FOR THE ARMY

The problem of the medical student and the need for more physicians continues to cause anxiety. The director-general of the Army Medical Corps has announced that to outfit the new armies and to supply reinforcements for six months it was estimated that at least 2,500 more physicians of military age would be required. It has been found necessary to bring physicians from Canada, Australia and New Zealand. The hospitals have been in difficulties for some time. Recently the chairman of the British Hospitals Association met Sir Alfred Keogh, director-general of the Army Medical Corps, on the subject. Sir Alfred agreed to extend to all hospitals connected with medical schools the arrangements under which the resident staffs of hospitals are granted honorary commissions in the Army Medical Corps, but he could not extend the operation of the scheme to other hospitals. The following are the details: 1. The scheme is applicable only to hospitals connected with recognized teaching schools (not postgraduate schools). 2. All candidates for commissions must be registered physicians. 3. They must be physically fit for general service. 4. They shall be called on to take general service with the Royal Army Medical Corps after three months' residence, and shall be liable to be called up for service before the expiration of that period, if required, on forty-eight hours' notice. 5. So far as practicable, not more than one third of the number of residents will be called up on forty-eight hours' notice at one time. 6. Each candidate shall, on being approved for a temporary honorary commission, receive a grant of $100 as an allowance for the purchase of uniform. This is part of the grant of $150 issuable on taking general service. 7. No undertaking can be entered into that any residents called up for service will be replaced by the War Office. 8. Applications for temporary commissions should be made to the War Office by the hospital authorities concerned, who will vouch for the candidates whose names they submit. 9. The authorities of any hospital who wish to avail themselves of this scheme should inform the War Office of the number of beds maintained in the institution, and the number of residents employed. The effect of this scheme will be that hospitals will to some extent be secured against losing resident officers, and young physicians going to the front will have some special training before they go.

WOMEN PHYSICIANS

Mr. F. D. Acland, speaking at a meeting in support of the London School of Medicine for Women, said the supply of male physicians was not sufficient to meet the demands of the present day, and would be quite inadequate in the future. There were hospitals in London speaking of closing, not because of lack of patients, but because of lack of physicians. They were now beginning to realize the value of women physicians, and it was a pity they had not done so earlier. This war was teaching the nation the great sphere which medicine now occupied in national welfare. We were learning in a terrible way the cheapness of life and at the same time realizing the value of human life. Sir Berkeley Moynihan said that if five years ago the cost of one day's war at the present rate had been devoted to research work the scourge of tuberculosis would now be hastening to its conclusion, and we should probably have been free from cancer. Writing on the decrease in the number of male medical students and the shortage of physicians which must follow, the *Lancet* says that we must look to the increased entry of women into the medical ranks to meet the situation thus created. "In much of the glut of work at home women are playing their part, and the country has observed with pleasure that the war has given to them a fresh impetus towards the study of medicine. Apart from general practice there are certain well-defined directions where women will find congenial occupation, assured incomes, and opportunities for the recognition of their scientific work." Among these are the superintendence of children's clinics, the inspection of child life, the treatment of diseases of children and women, and practice overseas, particularly in India.

WOMEN DISPENSERS

The War Office is now engaging women dispensers for the military hospitals. The qualifications required are membership in the Pharmaceutical Society, or the assistant's diploma of the Apothecaries' Society. The latter is the qualification usually held by women, who are being engaged only for the duration of the war, in order to permit the male assistants to be sent abroad. The pay is $1.46 per day, Sundays included. In certain county districts allowance and rations are given. The hours are from 9 a. m. to 5 p. m. The women dispensers have given satisfaction, and the War Office has increased the number employed.

Irish Vital Statistics

The Annual Report of the Registrar-General for Ireland has just been issued. The birth rate was low—22.6 per thousand of the population. The marriage rate was 5.41 per thousand—the highest since 1867. The death rate was 16.3—the lowest recorded in Ireland since 1868. The emigration rate was 4.6, much below that for any year since emigration returns were first compiled in 1851. The estimated population in the middle of 1914 showed an increase of 2,386 on the estimate for the middle of 1913. The births during the year 1914 amounted to 98,806, or 22.6 per thousand, which is 0.7 below the average rate for the ten years 1904-1913. Old age, as usual, occupies first place in the causes of death, being credited with 11,565 deaths; tuberculosis comes next with 9,089; and, then, in order, heart diseases, bronchitis, pneumonia, cancer. The tuberculosis death rate shows marked decline in recent years. From 1864 to 1878 it varied between 2.4 and 2.6 per thousand living. From 1879 to 1908 it varied between 2.6 and 2.9. From 1904 the decline has been fairly steady, the rate in the successive years being: 2.88; 2.70; 2.67; 2.66; 2.58; 2.41; 2.28; 2.20; 2.15; 2.14, and 2.07. But the rate is still much higher than that for England, which is 1.4.

BERLIN LETTER

Berlin, Aug. 31, 1915.

Personal

Professor Friedberger, division chief of the pharmacologic institute in Berlin, has been appointed to succeed Professor Römer as ordinary professor of hygiene at Greifswald. Friedberger has made some very commendable researches in immunology.

Professor Gros of Leipzig has been appointed ordinary professor of pharmacology in Halle to succeed the late Professor Harnack.

A recently deceased cleric left the Berlin Institute for Cancer Research an endowment of 300,000 marks ($75,000).

The War

The exchange of severely wounded German and English prisoners is no longer being made. Germany and Russia are now making such an exchange. Provision is also being made to intern sick and convalescing prisoners of various nationalities in Switzerland. The different warring nations have given their consent to such an arrangement.

Although the number of Russian prisoners now in the hands of the Germans and Austrians is astoundingly large, still these two nations apparently are well prepared to make provision for them. Since May 2 no less than 1,100,000 Russians have been taken prisoners. At Braunau in Bohemia a prison camp is being constructed to take care of 100,000 prisoners, a number equaling the population of a large city, and yet the very best care is being given these men, as any American can convince himself by visiting these camps. Notwithstanding the fact that a large number of these Russian prisoners are brought to the prison camp in a most unhygienic condition and frequently suffering from some infectious disease, the care given them in the camp is such that the morbidity rate among the prisoners is remarkably low. Typhus is the disease met with most frequently, the next in order being cholera, typhoid, dysentery and smallpox.

As may be expected, such a large number of prisoners must have a considerable guard. Inasmuch as death and imprisonment must also be reckoned with among German soldiers, it is not possible to detail to the prison camp soldiers who are physically fit for duty at the front; hence, they have detailed to such duty the men who ordinarily were mustered out of service or rejected for service because of physical unfitness. This, of course, does not mean that cripples are detailed for this service, but men who ordinarily could be sent to the front in time of need and yet would not be considered absolutely fit for such duty. Notwithstanding this fact, it is rather remarkable to note how well these soldiers stand up under the strain of their duty. In fact, nearly all show a great improvement in health. A

remarkable case in point is that of a man of 45 who, in 1897, entered a hospital because of an extensive left-sided empyema. A rib resection was done, but healing did not take place. Tubercle bacilli were not found. The surgeon performed a thoracoplasty, resecting five ribs, from the fourth to the eighth, removing all of the thickened pleura. The collapsed lung soon expanded again, and later an extensive plastic operation was performed. One-half of the left scapula was removed because the posterior rib stumps had become united to it. Convalescence was complicated by an acute nephritis and a very severe erysipelas. After two years the man was discharged as well. He was in fit condition for work and opened a window-cleaning establishment. When war was declared, his three sons went to the front and he volunteered for service. The military surgeon who examined him declared him unfit for duty because one-third of the left side of his thorax was missing. Thereon the man sought permission to enlist from the emperor himself and the request was granted. He was assigned to a transport as driver of a team, and in that capacity served throughout the entire campaign in France and without any personal inconvenience. Recently he was kicked in the right chest by a horse, and in consequence developed a hemoptysis. He was sent home on furlough. This case is one of great interest because it demonstrates that even a very extensive change in the thorax may permit of most unusual exertions and service.

PARIS LETTER

PARIS, SEPT. 9, 1915.

The War

THE PRACTICE OF SURGERY IN THE TERRITORIAL HOSPITALS

Experience has shown the disadvantages of leaving the initiative in surgical operations to physicians who are unfamiliar with the practice of military surgery, especially in certain unimportant hospitals. In some such cases, ill advised or useless operations, which would not have been performed in ordinary times without the assistance of a professional surgeon, have been performed to the detriment of the patients. To obviate these serious disadvantages, the minister of war has decided that all general surgical operations shall be performed exclusively by designated professional surgeons in each region after technical advice from the "head surgeons of sectors." The administration of the medical service has divided each territorial region (which represents a zone occupied in times of peace by an army corps) into three or four sectors corresponding to the military subdivisions of the region, and at the head of each of these sectors it has placed a head surgeon, who is to be in absolute control from the technical point of view, irrespective of all questions of rank.

These head surgeons of sectors are to fulfil two functions: 1. As operative surgeons each is to direct a surgical service in the place of his residence; he is to operate, moreover, after having consulted with the medical heads of the respective hospitals, in other establishments on patients who appear to him to need his personal attention. 2. As consulting surgeon, he is to visit the various establishments in his sector once every two weeks, first advising the medical heads of his coming; he is to give the physicians practicing there the necessary technical advice while refraining from becoming involved in questions of administration. In short, the head surgeon of a sector is at once operator, technical inspector and consulting surgeon.

While the head surgeons of sectors are to undertake the important operations within their respective territory, it is evident that they cannot perform all the operations. They must have surgical collaborators. The assistant secretary of state for the medical service has therefore directed the regional director to designate in all the important centers, after consulting with the head surgeon of the sector, one or several *chirurgiens de Place*, charged exclusively with the ordinary run of the surgery of the locality and of the neighboring hospitals, as well as with the urgent operations. These *chirurgiens de Place* are to be chosen from among the professional surgeons. They alone are to operate in the hospitals of that center and the environs.

The unimportant hospital centers are to receive only the slightly wounded patients, on the road to recovery and requiring only simple dressings. In case of an urgent operation on a patient in a hospital having no designated surgeon attached to its staff, the physician at the head of the hospital will telephone or telegraph to the head surgeon of the sector or of the nearest surgical center.

These rules apply only to major surgery (operations on the splanchnic cavities, resections, amputations, explorations for deeply situated projectiles). Minor surgical operations (the opening of abscesses and the extraction of superficial and easily accessible projectiles from the limbs) may be entrusted to the initiative of the physicians in charge of the cases, under the control of the *chirurgiens de Place*. The head surgeons of sectors are to make monthly reports on their tours of inspection and the technical functioning of their service, their residence and the territory within their jurisdiction. These documents are to be sent each month to the war department and to all the regional authorities.

PRISONERS OF WAR UNABLE TO ENDURE PRISON CAMPS TO BE PLACED IN SWISS HOSPITALS

It is well known that in the present war Switzerland has played an important humanitarian rôle, acting as intermediary in searching for prisoners, exchanging seriously wounded prisoners between France and Germany, etc. Switzerland is now about to undertake a new mission of trust, that of the hospital care of a certain number of prisoners of the various belligerent countries. These are to be patients who are not in a sufficiently serious condition to be returned to their own country, but who suffer particularly from the life in the prison camps. The first class taken care of there will probably be the tuberculous, who will be distributed among the principal climatic health resorts of Switzerland—Leysin, Montana, Davos, Arosa, etc. The prisoners are to be allowed a certain degree of liberty which is necessary for the reestablishment of their health. It is important, however, that they be not allowed to make use of this liberty to return home. It is probable that an agreement to this effect will be made not only by the prisoners themselves but also by the governments of their respective countries. Thereby surveillance will be much facilitated and the patients will be able to enjoy a certain degree of independence without entailing any abuses from which Switzerland would have to suffer.

THE HOSPITAL CARE OF PATIENTS WITH FISTULAS CAUSED BY WOUNDS OF WAR

The assistant secretary of war for the medical service has received a report of the presence in certain hospitals of a rather large number of soldiers almost cured of their wounds but still affected with fistulous openings caused by the presence of fragments of bone or of foreign bodies for which no active treatment has been undertaken. These patients ordinarily drag out a protracted stay in the unimportant hospitals, where it is not possible to undertake the surgical cure of these traumatic sequelae. The assistant secretary has therefore given instructions that all such patients who have been placed in hospitals where there is no surgical service shall be removed to hospitals having the necessary staff and equipment to operate for the speedy cure of such cases.

THE "DARDANELLES STAMP"

The Société française de Secours aux Blessés Militaires has contributed toward the conversion of the *Charles Roux*, a transatlantic liner, into a floating hospital. The society has furnished the boat with 300 beds and important hospital equipment. It has entirely at its own expense chartered another boat, the *Saint-François-d'Assise*, which is about to set out for the Dardanelles. The society has also sent out thirty nurses, some of whom are to work on board of the *Charles Roux*, while others are to be assigned to the ambulance units already established on the island of Lemnos. This work has imposed heavy expenses on the society. In order to meet these expenses, it has just issued a new five cent postage stamp called the Dardanelles stamp. This stamp shows an ambulance unit composed of several tents under the shadow of the French flag and the Red Cross standard; a nurse of the society is caring for a wounded soldier. This stamp is sold in books of twenty. On the cover of each book is a colored picture representing the *Charles Roux*, whose white hull is barred with a broad red stripe; at the masthead flutters the French flag and the flag of the Red Cross.

Accident to Professor Hayem

Dr. Hayem, formerly professor at the Faculté de médecine de Paris, has just been injured in an automobile accident which occurred in the outskirts of Chambéry.

Marriages

Clarence Searle Ketcham, M.D., Washington, D. C., to Miss Elizabeth Weed Rogers, at Huntington, L. I., N. Y., September 11.

John H. Nugent, M.D., Southampton, L. I., N. Y., to Miss Marie W. Moffitt of Center Moriches, L. I., N. Y., September 16.

Elmer Harrison Ormsby, M.D., Amsterdam, N. Y., to Miss Muriel Eloise Blackwood, of Huntingdon, Que., September 15.

Orel A. Welsh, M.D., Oregon City, Ore., to Miss Grace Wolcott of San Francisco, in Santa Cruz, Calif., September 11.

P. A. Surg. Ernest Oliver Joseph Eytinge, U. S. N., to Miss Marion Brooks, at Mare Island, Calif., September 11.

Henry Kleinschmidt, M.D., Oshkosh, Wis., to Miss Ethel Morris, of Farmington, Mich., in Detroit, September 1.

John Andrews Evert, M.D., Brainerd, Minn., to Miss Pearl A. Nash of Pipestone, Minn., about August 28.

Walter William Lowell, M.D., Brooklyn, to Miss Alice White of Brinsville, Ont., in Brooklyn, September 15.

Leslie Hall Redelings, M.D., Rochester, Minn., to Miss Gertrude Abbott of Plainfield, N. J., September 8.

Walton Evermont Muns, M.D., Columbia, Mo., to Miss Betty Hawkins, of New York City, September 6.

Thaddeus Hall Green, M.D., Bascom, Fla., to Miss Anna Lucia D'Antoni of Natchez, Miss., September 1.

Albert William Crews, M.D., Thurmond, W. Va., to Miss Pauline Riffe of Greenfield, Ind., September 16.

Ebenezer Ross Faulkner, M.D., to Miss Julia Whiton Little, both of New York City, September 11.

Clarence Vernon Smith, M.D., Tipton, Ind., to Christine Lukas, M.D., of Evanston, Ill., September 8.

Thomas Webster Edgar, M.D., to Miss Arleine E. Lamprey, both of New York City, September 7.

P. A. Surg. Emil Krulish, U. S. P. H. S., to Miss Sarah Sydnor, at Pasadena, Calif., August 30.

Deaths

Austin Flint, M.D. Jefferson Medical College, 1857; aged 79; died at his home in New York City, September 22, from cerebral hemorrhage. Dr. Flint was born in Northampton, Mass., March 28, 1836, the son of Dr. Austin Flint and Anne Skillings. He began his medical studies in the University of Louisville and after two years went to Philadelphia, where the degree of M.D. was given him by Jefferson Medical College in 1857. He practiced in Buffalo for two years, and was professor of physiology in the University of Buffalo. In 1859 he moved to New York City and became associated with the New York Medical College as professor of physiology. He then served in a similar capacity in the New Orleans School of Medicine for a year. At the outbreak of the Civil War Dr. Flint was appointed an Acting Assistant Surgeon in the Army and served for three years in this capacity in the General Hospital, New York City. He was one of the founders and for thirty-seven years was professor of physiology in Bellevue Hospital Medical College. During six years of this time he also filled the chair of physiology in Long Island Hospital College, Brooklyn. He associated himself with Cornell University Medical College in 1898 and was professor and professor emeritus from that time until his death.

He was a Fellow of the American Medical Association, an honorary member of the New York Academy of Medicine, a member of the Association of Military Surgeons of the United States and of many other learned societies. He was given the degree of LL.D. in 1885 and that of A.M. in 1894 by Princeton University and was decorated with the Third Class Order of Bolivar by the government of Venezuela in 1891. Dr. Flint had been visiting physician since 1869, consulting physician and visiting physician to the Insane Pavilion of Bellevue Hospital since 1896; was consulting physician to the Bellevue Hospital Dispensary for nearly fifty years, and from 1874 to 1878, he served as surgeon-general of the state of New York.

Dr. Flint was a prolific writer and his encyclopedic work on the Physiology of Man, in five volumes, has gone through two editions; his treatise on Chemical Examination of the Urine in Disease, is now in its sixth edition, and his Text Book of Human Physiology has required four editions up to the present time. He was also the author of other treatises and of many monographs and articles, chiefly on the subject of physiology, in which he specialized, and on medical biography and history.

Benjamin Lindsay Coleman, M.D. Bellevue Hospital Medical College, 1871; aged 68; a member and formerly vice president of the Kentucky State Medical Association; once president of the Fayette County Medical Society; member of the Mississippi Valley Medical Association; physician to the Good Samaritan Hospital, Lexington, Ky.; for many years curator of Transylvania University and a member of the Board of Trustees of Hamilton College; died at his home in Lexington, Ky., September 14, from cerebral hemorrhage.

Lorne Benjamin Graham, M.D. University of Toronto, Ont., 1907; formerly of Pacific Grove, Calif.; a member of the Medical Society of the State of California; who offered his services to the British Government at the outbreak of the war and was stationed at Eastbourne, England, as supervisor of Red Cross work and later was transferred to the Dardanelles; was killed in the Aegean Sea, August 17, when the transport on which he was proceeding to his new post of duty was sunk by a German submarine.

William F. Muhlenberg, M.D. University of Pennsylvania, Philadelphia, 1872; aged 62; a Fellow of the American Medical Association; formerly president of the Berks County, Pa., Medical Society; one of the founders and a member of the Board of Managers of the Reading Hospital; president of the Pennsylvania German Society; for more than thirty years surgeon to the Schuylkill Valley Railroad; died at his home in Reading, Pa., August 25, from myocarditis.

Emil Ernest Guenther, M.D. New York University, New York City, 1877; aged 61; a member of the Medical Society of New Jersey and a practitioner of Newark; formerly coroner of Essex County, N. J.; visiting surgeon to St. Michael's and St. Barnabas' hospitals, and a member of the staff of the German Hospital, Newark, N. J.; for many years a trustee of the Newark City Home; died at his summer home in Mountainview, N. J., September 12, from heart disease.

Chester Emory Coulter, M.D. University of Michigan, Ann Arbor, 1883; aged 60; for twenty-six years a practitioner of Ogden, Utah; a member of the staff of the Dee Hospital for many years; at one time city physician and a member of the Board of Education; died at his home in Ogden, September 12, from nephritis. The Weber County Medical Association attended the funeral service in a body.

P. Van Benschoten Fowler, M.D. Medico-Chirurgical College of Philadelphia, 1897; aged 49; a Fellow of the American Medical Association; for two terms secretary of the Suffolk County Medical Society; a member of the staff of the Babylon, L. I., Hospital, and of the school board of Centre Moriches, L. I.; died in Brentwood, L. I., September 14, from carcinoma of the stomach.

Susan LaFlesche Picotte, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1889; aged 49; a Fellow of the American Medical Association; for many years prominent as a medical missionary among the Indians of Nebraska and adjoining states; daughter of Chief Joseph, the last great chief of the Omaha tribe; died at her home in Walthill, Neb., September 18.

Charles R. Newton, M.D. University of Pennsylvania, Philadelphia, 1893; aged 58; of Nicholson, Pa.; a Fellow of the American Medical Association; physician in charge of the hospital maintained by the Delaware, Lackawanna and Western Railroad, for its workmen on the Tunkhannock bridge; died September 12, in Bellevue Hospital, New York City.

James Clinton Moore, M.D. University of Nashville, Tenn., 1900; aged 47; a member of the Medical Association of the State of Alabama; for several years a member of the Board of Education of Anniston and one of the prime movers in the building of St. Luke's Hospital; died at his home in Anniston, Ala., September 13, from heart disease.

Robert Gamaliel Cornwell, M.D. Long Island College Hospital, Brooklyn, 1875; aged 62; a member of the Medical Society of the State of New York; once health officer

of Riverhead; jail physician for five years and for the last three years coroner of Suffolk County; died at his home in Riverhead, N. Y., September 16, from heart disease.

Charles Lee Crawford, M.D. St. Louis College of Physicians and Surgeons, 1893; aged 52; a Fellow of the American Medical Association; formerly of Vevay, Ind.; but since 1910 a resident of Carlisle, Ark., was shot and instantly killed September 12, near Carlisle, by a negro whom he was attempting to arrest for murder.

Abijah J. Miles, M.D. Medical College of Ohio, Cincinnati, 1863; aged 81; a veteran of the Civil War; a member of the Royal Society of Medicine, London, England, and Cincinnati Academy of Medicine; at one time health officer of Cincinnati; died at the home of his brother-in-law in that city, September 8.

Oliver Willard Sinclair, M.D. New York University, New York City, 1889; McGill University, Montreal, 1891; aged 46; a Fellow of the American Medical Association; one of the owners of the Sequoia Hospital, Eureka, Calif.; was killed in that city September 15, in a collision between his automobile and a railway train.

George Francis McCutcheon Lamont, M.D. Long Island College Hospital, 1896; aged 42; of Newark, N. J.; a Fellow of the American Medical Association and a well known specialist on diseases of the eye, ear, nose and throat; was drowned off Sandy Hook, N. J., September 19 by the capsizing of a motor boat.

Andrew Lawson Grieve, M.D. Bellevue Hospital Medical College, 1898; aged 38; formerly of New Bedford, Mass.; fell or jumped from a third-story window in Providence, R. I., September 11, was impaled on a picket fence and died a few hours later in St. Luke's Hospital, Providence, from his injuries.

Robert Scott Wiley, M.D. Medical College of Virginia, Richmond, 1872; University of Maryland, Baltimore, 1875; aged 69; a member of the Medical Society of Virginia; for thirty-five years a practitioner of Allegheny County, Va.; died at his home in Covington, Va., September 4.

Henry F. Kortebein, M.D. Northwestern University Medical School, Chicago, 1892; aged 46; formerly a member of the State Medical Society of Wisconsin and a well known practitioner of Milwaukee; died at the Oconomowoc Health Resort, near Nashotah, Wis., September 14.

David M. Smith (license, certificate, Missouri, 1884), aged 80; for forty-six years a practitioner of Wright County, Mo.; was thrown from his horse, September 10, the horse falling on him and crushing him; and died from his injuries at his home near Hartsville, Mo., a few hours later.

Frank Mason Putnam, M.D. Dartmouth Medical School, Hanover, N. H., 1878; aged 62; of Gardiner, Me.; director of the National Bank of Gardiner, and chairman of the board of selectmen of Farmingdale; died at his home in Gardiner, September 1.

Jeremiah Campbell Foster, M.D. Hahnemann Medical College, Philadelphia, 1892; aged 44; of Columbus, Ohio; adjuster for Ohio and West Virginia for the Order of Ben Hur; died in Grant Hospital, Columbus, September 14, from heart disease.

George Wall, M.D. Rush Medical College, 1889; aged 63; a Fellow of the American Medical Association and for more than twenty-five years a practitioner of Oregon; died at his home in Cottage Grove, Ore., September 10, from cerebral hemorrhage.

James Sullivan, M.D. College of Physicians and Surgeons, Chicago, 1891; for many years a practitioner of Tama, Ia., but for the last year a resident of Muscatine, Ia.; died at the home of his brother in Machias, Me., September 2, from pneumonia.

Frederick Darius Bickford, M.D. University of Michigan, Ann Arbor, 1882; aged 54; for many years a practitioner of Ogden and Salt Lake City, Utah, but for the last year a resident of Fillmore, Utah, died in that place, September 10.

Walker Schell, M.D. Miami Medical College, Cincinnati, 1878; aged 59; a Fellow of the American Medical Association and a prominent practitioner of southern Indiana; died at his home in Terre Haute, Ind., September 13, from ptomain poisoning.

John Lester Sivert, M.D. University of Nashville, Tenn., 1909; aged 33, of Georgetown, W. Va.; was found dead in his office in Georgetown, September 13, from the effects of poison believed to have been self-administered with suicidal intent.

James W. Wallace, M.D. St. Louis College of Physicians and Surgeons, 1893; aged 55; of Greenway, Ark.; died at the home of his father-in-law in Paducah, Ky., August 28, from uremia and cirrhosis of the liver, August 29.

John G. McGuire, M.D. Jefferson Medical College, 1861; aged 88; until 1895, a practitioner and druggist of Anamosa and Mechanicsville, Ia.; died at the home of his son in Chicago, September 5, from cerebral hemorrhage.

Ralph F. McHenry, M.D. University of Pittsburgh, Pa., 1895; aged 46; a Fellow of the American Medical Association; chief surgeon of the Windber, Pa., Hospital; died in Windber, September 14, from typhoid fever.

Samuel B. Limerick, M.D. Kansas City, Mo., Medical College, 1876; aged 61; a pioneer practitioner of Snohomish, Wash., but since 1898, a resident of Seattle; died in Providence Hospital, Seattle, September 11.

Philander F. Wellman (license, Kansas, 1901), aged 77; of Coffeyville, Kan.; a practitioner of southern Kansas for more than thirty years; died at the home of his son in Kansas City, Kan., September 16.

George T. Prince, M.D. University of Tennessee, Nashville, 1887; aged 50; a resident of Chattanooga, Tenn., for ten years; died at his home in St. Elmo, Chattanooga, September 16, from acute gastritis.

Elias S. Boyd (license, Texas, Fifth Judicial District Board, 1887); aged 66; a practitioner and Presbyterian clergyman of Texas since 1880; died at his home in Dallas, September 10.

Granville Prizer, M.D. University of Pennsylvania, Philadelphia, 1868; aged 70; at one time Register of Wills of Chester County, Pa.; died at his home in Lionville, Pa., September 7.

Carl N. McCaslin, M.D. Medical College of Indiana, Indianapolis, 1902; aged 39; of Earl Park, Ind.; died in the Washington Park Hospital, Chicago, September 17, from peritonitis.

Tyrer Harris Hassell, M.D. University of Louisville, Ky., 1885; aged 53; a member of the Tennessee State Medical Association; died at his home in Springfield, Tenn., September 11.

Joseph M. Wolf, M.D. University of Louisville, Ky., 1870; aged 74; for many years a practitioner of Arkansas, but since 1895, a resident of Texas; died at his home in Rockdale, Tex., August 30.

Henry Lehmann, M.D. New York University, New York City, 1881; aged 56; formerly a practitioner of New York City; died at his home in Brooklyn, September 13, from diabetes.

Philander Noffsinger Hardman (license, years of practice, Iowa, 1887), aged 74; a veteran of the Civil War; died at his home in Sigourney, Iowa, September 6, from valvular heart disease.

William Andrew Walker (license, Kansas, 1901), aged 82; an eclectic practitioner of Galena, Kan.; died at the home of his son in that city, September 15, from cerebral hemorrhage.

Andrew J. Stokes, M.D. Western Reserve University, Cleveland, 1882; aged 56; of Jersey Shore, Pa.; died at a cottage on Pine Creek, near Jersey Shore, September 7.

Newton Rodger McLean, M.D. Medico-Chirurgical College of Philadelphia, 1904; aged 38; died suddenly at his home in Bolivar, Pa., September 12, from heart disease.

Josiah Candor McLaughlin, M.D. College of Physicians and Surgeons, Kansas City, Kan., 1901; aged 50; died at his home in Kansas City, Mo., September 11, from nephritis.

Aquila A. Washburn, M.D. Jefferson Medical College, 1881; aged 56; a member of the Indiana State Medical Association; died at his home in Clinton, Ind., September 16.

William Hardin Boals, M.D. Rush Medical College, 1877; aged 65; of Minneapolis; died in the Eitel Hospital in that city, September 10, after a surgical operation.

William T. Boyd (license, Maryland), aged 55; of Upper Falls, Md.; died at the home of his father in Lebanon, Pa., from disease of the lungs, September 14.

Sidney W. Walters, M.D. Bennett Medical College, Chicago, 1898; aged 51; formerly of Goshen, Ind.; died at his home in Chicago, September 13.

Alvin Steel Davidson (license, Blount County, Ala., 1876), died at his home in Oneonta, Ala., September 2.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ADDISON'S GALVANIC ELECTRIC BELT

While the electric-belt fake has lost the vogue it once had, that class of the community to which the late Mr. Barnum so feelingly referred is still in evidence. This, at least, is the impression one gets from an advertisement that appeared in a weekly publication devoted to the "show world"—the *Billboard*—and here reproduced:

This makes interesting reading, especially as the *Billboard* has editorially declared that its "advertising columns are as carefully edited and the offers that get into them are as closely scrutinized as jealous care, scrupulous honesty and constant vigilance can ensure." Further the *Billboard* has said: "We print no swindling patent medicine ads . . . in fact no catchpenny or petty larceny business whatever."

In view of this, it seemed worth while to send fifteen cents to the Electric Appliance Company for the "sample belt and lecture on electricity." The belt came, also the "lecture," to say nothing of a miscellaneous assortment of advertisements of medical or quasi-medical devices. Cheap and tawdry was the belt but a most gorgeous affair, withal. Strips of vivid red and yellow cotton crudely put together and enveloping small pieces of copper and zinc separated by blotting paper. This last, of course, to generate the electric current. The "lecture on electricity" was a gem: "Did not time prevent, we could talk for hours upon the many wonderful things that electricity has accomplished. . . . Electricity contains all the elementary principles and therefore all the healing properties of all things

Miniature reproduction of the package containing the ten-cent electric belt.

in being. All the balms, oils and minerals in existence are contained in electricity and in their most skillfully combined proportions. . . . If you are weak you need electricity. For lost womanhood or manhood there is nothing like electricity to restore your health. To the ladies we will say, if you have female pains there is nothing better than an electric belt. . . . Electricity is the greatest power on earth. It puts life and force into whatever it touches; gives relief to rheumatism, backache, kidney, liver and bladder troubles, early decay, night losses, lack of nerve and vigor, nervous debility, constipation, dyspepsia, undevelopment and lost vitality and all female complications."

All this, of course, leading up to the sale of the Addison Galvanic Electric Belt, which comes in a neat little box, on which is plainly printed the price, $2.50. And this electrical marvel may be purchased from the manufacturers, the Electric Appliance Company, for the trivial sum of $1.10 a dozen—less than ten cents each. Question: How much "nice easy money" have the "medicine show men" taken in this season in selling for $2.50 an "Addison Galvanic Electric Belt" that costs less than ten cents and isn't worth anything?

ARTICLES REFUSED RECOGNITION

Reports of the Council on Pharmacy and Chemistry

Below appear abstracts of the Council's action on articles refused recognition which were not deemed of sufficient importance to require a lengthy report. A star opposite a title indicates that a more extensive report on the article in question will appear in the Reports of the Council on Pharmacy and Chemistry, 1915, and that a reprint of the report in question will be sent on receipt of a 2-cent stamp.

Iodum-Miller*

Iodum-Miller (Iodum-Miller Company, Kansas City, Mo.) is advertised to physicians under the implied claim that the preparation is new and original. It is said to be made from "Soot Iodin." What "Soot Iodin" is, the company does not explain beyond making the statement that it is made from "Resublime" iodin and is soluble in water. According to the label:

". . . 45 drops equals 1 dr. by weight. Each drop equals the per cent. of iodin in 1 gr. potas. iodid."

Iodum-Miller, when analyzed in the Chemical Laboratory of the American Medical Association, was found to be essentially a solution of iodin and potassium iodid in glycerin. This, of course, disposes of the implied claim that it should be regarded as something new and original. It was found to contain 1.68 per cent. of free iodin and 1.80 per cent. potassium iodid. If the company's statement that 45 drops of Iodum-Miller weigh 1 dr. is correct, then it is obvious that 1 drop of the product equals the percentage, not of 1 gr. potassium iodid, as claimed, but of only 1/20 gr. potassium iodid. This being the case the statement on the label is manifestly false and should constitute misbranding under the federal Food and Drugs Act.

Iodum-Miller is recommended for internal use in doses from ½ drop to 20 drops which, as the examination shows, is equivalent to from 1/40 grain to 1 grain potassium iodid. Yet, the use of this product is suggested in:

"Pneumonia, Tuberculosis, Pleurisy, Typhoid Fever, Syphilis, Catarrh of Mucous Surface of Alimentary Canal, Autotoxemia, Vomiting of Pregnancy, Rheumatism, Chronic Glandular and Organic Affections."

Its external or germicidal efficacy may be measured by the free-iodin content. The laboratory's analysis showed that this is less than one third of that of tincture of iodin. Nevertheless, Iodum-Miller is recommended for external application in:

"Pleurisy, Cough, Sore Throat, Pyorrhea . . . Blood Poison, Diseases of Uterus and appendages . . . Gonorrhea . . . Orchitis, Bubo, Prostatitis, Swellings, Enlarged Glands, Etc."

The therapeutic claims made for Iodum-Miller are so obviously extravagant that they need no discussion. The case against this product may be summed up thus: (1) Incorrect statements are made regarding its composition; (2) the therapeutic claims made for it are unwarranted, and (3) the application of a trade name to an established non-proprietary product (glycerin solution of iodin) is unjustifiable. In view of these facts the Council held Iodum-Miller ineligible for New and Nonofficial Remedies.

Iod-Izd-Oil (Miller's)*

Iod-Izd-Oil (Miller's) is said to be an "iodin combination" made "from the same Soluble Soot Iodin as in Iodum Miller." It is said to "liberate Free Soluble Iodin" when applied to the skin, mucous surfaces, etc. It is further defined as "Soluble Iodin combined with water-white Hydrocarbon Oil" and is said to liberate "Soluble Iodin 2 per cent." While these statements suggest that Iod-Izd-Oil (Miller's) contains the iodin-potassium-iodid combination contained in Iodum-Miller, analysis indicated the oil to be a simple solution of iodin in liquid petrolatum. Quantitative determinations indicated, not 2 per cent. of iodin, as claimed, but only 0.42 per cent. and all of this was present as free iodin.

Iod-Izd-Oil (Miller's) is refused recognition because the composition is not correctly stated and because the application of a trade name to an established non-proprietary product tends to confusion.

Hexa-Co-Sal-In

Hexa-co-sal-in (Hexa-Co-Sal-In Company, Red Bank, N. J.) is advertised as "a condensation product of familiar composition." The further explanation that it is "colchi-magnesium salicylate with anhydrous hexamethylenamin" does not make this statement much clearer. "Colchi-magnesium salicylate"—not to speak of its condensation product with hexamethylenamin—is unknown in chemical literature. As a matter of fact, an examination made by the Chemical Laboratory of the American Medical Association shows that Hexa-co-sal-in is a simple mechanical mixture of hexamethylenamin, magnesium salicylate and some colchicum preparation. The composition is therefore falsely stated.

The preparation is advertised as:

"Antirheumatic, Antineuritic, Urinary Antiseptic."
"Uric Acid Mobolizer" (sic).
"Intestinal Antiseptic, Mildly Laxative."
"Whenever a salicylate is indicated use Hexa-co-sal-in."

The combination of salicylates, hexamethylenamin and colchicum in a routine formula is certainly inadvisable; where one of the ingredients is needed, the others may be useless or even harmful. The unqualified advice to use hexamethylenamin and colchicum "whenever a salicylate is indicated" is likely to do harm.

The statement of the composition of this preparation is false; unwarranted therapeutic claims are made for it, and the mixture is unscientific. The Council held Hexa-co-sal-in ineligible for New and Nonofficial Remedies because of conflict with Rules 1, 6 and 10.

Correspondence

Eye Headaches

To the Editor:—Dr. W. F. Cheney has recently written an article entitled "Gastric Headaches" (*Am. Jour. Med. Sc.*, May, 1915, p. 650) which should not go unchallenged on account of an apparent backward step in teaching that recurrent headaches, serious causes being excluded, are due to the stomach and not to the eyes. The poor stomach of civilized humanity has been long maltreated for headaches, and it is a pity to revive such treatment.

That a bad stomach can cause a headache is true, but never a headache that puts a patient to bed and out of business. A headache due to an overdose of alcohol is not due to the upsetting of the stomach, but to the action of alcohol on the brain. That going without food and purging will cure an eye headache is true; so will time. There is no anatomic reason for a stomach to cause a one-sided headache (instanced by Cheney), and there is good reflex reason why any headache may cause retarded digestion, nausea and vomiting. Recurrent eye pains can cause all kinds of gastric disturbances, hyperchlorhydria, etc.

In Cheney's Case 1 he took a hardworking office man and made him take more exercise out of doors, i. e., reduced his hours of eye work. The patient improved as to his headaches.

In Case 2 Cheney stopped the man's alcohol and reduced his tobacco, both of which cause a weakening of the eye muscles; the patient got better of his headaches.

In Case 3, the glasses did the girl no good, and there was "a chronic gastritis of the subacidity type." Cheney does not say for what defect glasses were prescribed, whether or not the eyes were reexamined and the glasses found correct, or whether the patient still wore glasses after the stomach treatment began or whether she discarded them. He corrected a diet "which had been in every way improper both in quality and quantity." This regulation of the diet, with the tincture of nux vomica before meals and cascara at bedtime, stopped the headaches. There is no doubt that a patient subject to eyestrain headaches cannot abuse his stomach with impunity. This simply means that any toxin absorbed from the stomach or intestines may add the last straw to the resisting power of the eye-muscle balance, and a headache is the result.

I contend that if the eye defect is corrected the stomach, if not deliberately abused, will correct itself. On the other hand, no amount of treatment of the stomach, without correcting the eye defects or reducing the number of hours the eyes are used, or correcting a mal-use of the eyes, thus preventing eye tire, will stop migraine headaches.

A headache that is "periodical" "throughout months and years," "rarely lasting over twenty-four hours," in which "the patient awakens with pain in the morning," "growing more intense as the day goes on," or "it may come on in the evening," "may be so severe and prostrating as to incapacitate for any kind of work while they last," "sometimes nausea and vomiting," or "there may be no disturbance whatever of the stomach," is almost always an eyestrain headache and is probably very rarely a "gastric" headache.

OLIVER T. OSBORNE, M.D., New Haven, Conn.

To Aid the Expression of Dosage by the Metric System

To the Editor:—To facilitate the expression of dosage and solutions in the metric system, I desire to recommend a resort to two expedients with which we are all familiar.

First, as the cubic centimeter is a measure of capacity it should have a name. I propose the word "Ceci" (c.c.).

Second, let us disregard all such intermediate expressions as decigrams, centigrams, hundredths of a cubic centimeter, etc., and read all metric expressions in prescriptions in milles in precisely the same manner as we read our monetary expressions in cents. No one reads $1.50 as one and fifty-hundredths of a dollar, but as one dollar and fifty cents. Then 1.500 c.c. would be read one ceci, five hundred milles; millecci being understood. And 5.080 grams would be read five grams and eighty milles; milligram being understood.

Also as we never write one dollar ten cents thus, $1.1, but always thus, $1.10, so we should always have the three places in our metric prescriptions thus, 1.700 gm. and never 1.7 gram. This for clarity and uniformity.

FRANK THOMAS WOODBURY, M.D., Camp Gaillard, C. Z.

The Sweet Potato as an Aphrodisiac

To the Editor:—In a recent editorial [THE JOURNAL, Sept. 11, 1915, p. 957] on the "Sugars of the Sweet-Potato" you cite a quotation from the "Merry Wives of Windsor" as evidence that Shakespeare classed the sweet potato with sweetmeats. Let me suggest another interpretation.

The full quotation reads: "Let the sky rain potatoes; let it thunder to the tune of 'Green Sleeves'; hail kissing-comfits and snow eringoes; let there come a tempest of provocation, I shelter me here (embracing Mrs. Ford)." All three edibles above mentioned were, during Shakespeare's time, considered aphrodisiac, as truffles are today by the laity. The whole situation of the scene together with the allusion to the tune of "Green Sleeves" (a lascivious song) proves the correctness of my contention.

GEORGE MINGES, M.D., Dubuque, Iowa.

Transverse Incision in Operation for Appendicitis

To the Editor:—In reading Dr. A. E. Rockey's paper (THE JOURNAL, Sept. 11, 1915, p. 939), I was struck by the fact that no mention was made by the author, or any of those who discussed the paper, of an important point brought out first, I think, by Professor Kocher of Berne, Switzerland: so far as possible to make the incision follow the line of skin cleavage. This line is transverse or nearly so in the lower abdomen, and when followed, the wound heals better, with a much narrower scar, and far less danger of postoperative hernia. This method has been followed by Babcock of Philadelphia for several years, with excellent results.

R. PENN SMITH, M.D., Pittsburgh.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

JUDGMENT FOR DAMAGES—HERNIA—UNDER WORKMEN'S COMPENSATION LAW

To the Editor:—A man was injured in the mines and among his injuries a hernia developed. The employers refused to compensate this man any more than to the amount of $2.75, the price of a truss. He has brought suit. In a journal which I am unable to locate I find that a man got judgment in another state against the industrial commission of that state. Can you give me any reference to this case, or to any similar cases?

John Caldwell, M.D., Rayland, Ohio.

Answer.—The questioner has failed to state whether or not the person injured was working under the workmen's compensation law. If he was working under the compensation law, that law determines the amount of compensation to which he is entitled, and that amount can be recovered without necessity of entering suit. If he was not under the compensation law, he would have to sue under the common law.

Industrial commissions are administrative (and in some states quasi judicial) bodies appointed to administer the workmen's compensation law, and could not be sued by an injured person for compensation. The questioner, therefore, must be in error about judgment having been obtained against an industrial commission of some state for compensation due an injured workman.

In the case mentioned it is quite likely that the employers refuse to pay compensation for the reason that they believe the hernia was not the result of an accident. It is very common for workmen who receive an injury to claim that as a result of the injury a hernia developed, when as a matter of fact the hernia was present before the injury was received. Many cases of this kind have been tried under the common law as well as under workmen's compensation acts, with decisions varying, naturally, according to the facts in each particular case.

HERPES ZOSTER ON MUCOUS MEMBRANES

To the Editor:—Does herpes zoster occur in the buccal mucous membrane? A case was shown recently in the New York Post-Graduate School in which there had been vesicles on the inner surface of the mouth. These had been diagnosed as herpes zoster, but when the patient was shown to the class the vesicles had disappeared, leaving deep depressions on the inner surface of the cheek.

Julian L. Kendall, M.D., New York City.

Answer.—When there is involvement of the second branch of the fifth nerve, the eruption of herpes may occur on the cheek, side of the nose, and one-half of the upper lip. In exceptional cases, it may occur also on the mucous membranes of the cheek and pharynx. Loss of the teeth and necrosis of the jaw have been noted as rare complications.

LACTATION DURING PREGNANCY

To the Editor:—Pardon my suggesting that in your reply to the query of Dr. Norman (The Journal, August 21), you pass too lightly over the possible bad effects to the infant of nursing during pregnancy.

While so far as I know, none of the standard authorities consider that deleterious substances are present in the milk as a result of pregnancy, there is practical unanimity among them in ascribing frequent bad results to infants nursing from the breasts of pregnant mothers. That this is not always due to nervous impressions is attested by the fact that there is not infrequently a deterioration in the mother's milk, even when she is ignorant of her pregnancy. That the decreased value of the milk of a pregnant woman may be due to a diminished supply or to an abnormal quantitative variation in normal constituents does not alter the fact of its undesirability as an infant's diet. Nor does it follow, because pregnancy does not always cause a deterioration of the milk, that it never does, any more than we can assume, because the laity are usually wrong on medical matters, that they are always wrong.

In lieu of further discussion of this question, I beg to refer you to the texts of Pfaundler and Schlossman, Rotch, Holt and others, who are not without reputation in the field of pediatrics. If, in the light of present-day knowledge, it is a matter of little or no consequence to the welfare of the nursling as to whether or not the mother is pregnant, it is the duty of pediatricians to lose no time in instructing, not the laity, but a large body of earnest and able general practitioners.

Benjamin H. Brown, M.D., Muskogee, Okla.

Answer.—There is no scientific proof of the theories advanced by our correspondent. While it is possible that in certain instances on the incidence of pregnancy the milk does deteriorate, that is not proof that the deterioration is due to the presence of the pregnancy. It would be a matter of clinical importance to determine whether pregnancy in itself without any attendant nervous phenomena produces the deterioration of milk which our correspondent suggests as a possibility. It is an unquestionable fact that a fair proportion of mothers nurse their babies until they learn of the presence of the pregnancy. It has never been possible by chemical analysis to determine any deleterious substances in the milk of pregnant women. Such substances, of course, may not be subject to discovery in this matter, but it would seem to be far wiser to assume that the pregnancy is not to blame for the disturbance in the infant or decrease in the flow of milk, and to seek in all instances to attribute this to some other cause. Certainly more harm can be done by assuming that pregnancy is deleterious to nursing than by assuming the opposite, and the question of the middle ground is at least debatable.

THE CLINICAL USE OF RADIUM

To the Editor:—Please inform me where I can secure literature on the clinical use of radium.

A. A. Ashby, M.D., Red Oak, Iowa.

Answer.—A list of references on this subject was published in The Journal for Oct. 18, 1913, p. 1475. The following articles have appeared subsequently to that date:

Literature on Radioactive Waters, The Journal, Sept. 18, 1915, p. 1049.

Abbe, R.: Roentgen-Ray Epithelioma Curable by Radium, The Journal, July 17, 1915, p. 230.

Simpson, F. E.: Radium in Treatment of Keloids, The Journal, April 17, 1915, p. 1300.

Toussey, S.: Roentgen-ray Keratoses on Hand of Roentgenologist Cured by Radium, The Journal, April 24, 1915, p. 1394.

Clark, A. S.: Radium Treatment of Cutaneous Epitheliomas by Single or Massive Doses, The Journal, May 9, 1914, p. 1453.

Toussey, S.: Case of Disseminated Carcinoma of Breasts and Axilla Improved by Radium, The Journal, April 11, 1914, p. 1167.

Rowntree, L. G., and Baetjer, W. A.: Radium in Internal Medicine, Its Physiologic and Pharmacologic Effects, The Journal, Oct. 18, 1913, p. 1438.

Simpson, F. E.: Radium in Skin Diseases, The Journal, July 12, 1913, p. 80.

Simpson, F. E.: Radium, Its Use and Limitation in Skin Diseases, The Journal, Aug. 29, 1914, p. 737.

Holding, A. F.: Relative Value of Radium in Dermatology, The Journal, Aug. 29, 1914, p. 743.

Kelly, H. A., and Burnam, C. F.: Radium in Treatment of Uterine Hemorrhage and Fibroid Tumors, The Journal, Aug. 22, 1914, p. 622.

Janeway, H. H.: Results of Radium in Cancer, The Journal, May 30, 1914, p. 1707.

Chace, A. F., and Fine, M. S.: The Use of Atophan and Radium Emanation in Treatment of Gout and Arthritides, The Journal, Sept. 12, 1914, p. 945.

Zinke, E. G.: Curative Effect of Radium, The Journal, Sept. 5, 1914, p. 817.

Newcomet, W. S.: Radium and Roentgen Rays in Radiotherapy, The Journal, Aug. 29, 1914, p. 743.

Schoetenberger, F. J., and Schapira, S. W.: Application of Radium in Bladder for Carcinoma, The Journal, Nov. 21, 1914, p. 1852.

Price of Radium Activators, Queries and Minor Notes, The Journal, Nov. 14, 1914, p. 1780.

Radium in Cancer, Current Comment, The Journal, Aug. 29, 1914, p. 787.

Radium Therapy in Carcinoma, Current Comment, The Journal, Jan. 17, 1914, p. 212.

Literature on Radium, Queries and Minor Notes, The Journal, Oct. 18, 1913, p. 1475.

Price of Radium Preparations, Current Comment, The Journal, Oct. 11, 1913, p. 1382.

Radium in the United States, editorial, The Journal, June 14, 1913, p. 1882.

Endemic Goiter and Radio-Activity, editorial, The Journal, June 7, 1913, p. 1799.

Effects of Radium Emanations on Uric Acid of the Blood, Current Comment, The Journal, Feb. 24, 1912, p. 560.

TREATMENT OF BEE STINGS

To the Editor:—Referring to query of Dr. Kettelkamp, under this heading (The Journal, Sept. 11, 1915, p. 972), I had a similar case and recognizing the evidences of anaphylaxis I gave 10 minims of epinephrin hypodermically with almost immediate relief. This may not be invariably successful, but I believe it is worth trying in such cases.

Frank L. Wood, M.D., Lynden, Wash.

Compensations in Medicine.—For scientific interest the field in medicine is large, and the reward comes in achievement, but the compensation otherwise is negligible. Problems of all sorts develop for the laboratory man as well as for the clinician in medicine and their solution is worth while, but not profitable.—Isadore Dyer, M.D., *New Orleans Medical and Surgical Journal.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, October 5-6. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

ARKANSAS: Regular, Little Rock, November 9-10. Sec., Dr. T. J. Stout, Brinkley. Homeopathic, Little Rock, November 11. Sec., Dr. Scott C. Runnels, 900 Scott St., Little Rock.

COLORADO: Denver, October 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Regular, New Haven, November 9-10. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven. Homeopathic, New Haven, November 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic, November 9. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DISTRICT OF COLUMBIA: Washington, October 12. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

GEORGIA: Atlanta, October 12. Sec., Dr. C. T. Nolan, Marietta.

IDAHO: Wallace, October 5. Sec., Dr. C. A. Dettmen, Burke.

ILLINOIS: Chicago, October 13-15. Sec., Dr. C. St. Clair Drake, Springfield.

IOWA: Des Moines, October 19-21. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Topeka, October 12-14. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, November 9-10. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MICHIGAN: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, October 5-8. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, October 26-27. Sec., Dr. E. H. Galloway, Jackson.

MONTANA: Helena, October 5. Sec., Dr. William C. Riddell, Helena.

NEBRASKA: Lincoln, November 10-11. Sec., Dr. H. B. Cummins, Seward.

NEVADA: Carson City, November 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, October 19-20. Sec., Dr. G. H. Norton, 429 E. State St., Trenton.

NEW YORK: Albany, Buffalo, New York, Syracuse, October 5-8. Mr. Harlan H. Horner, Chief, Examination Division, State Education Bldg., Albany.

OKLAHOMA: Oklahoma City, October 12. Sec., Dr. Ralph V. Smith, 502 Daniel Bldg., Tulsa.

PORTO RICO: San Juan, October 4. Sec., Dr. Quevedo Baez, Allen St., San Juan.

RHODE ISLAND: Providence, October 7-8. Sec., Dr. Gardner T. Swarts, State House, Providence.

SOUTH CAROLINA: Columbia, November 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, November 9-11. Sec., Dr. M. P. McElhannon, Belton.

UTAH: Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

WEST VIRGINIA: Elkins, November 9. Sec., Dr. S. L. Jepson, Charleston.

WYOMING: Laramie, October 13-15. Sec., Dr. H. E. McCollum, Laramie.

Montana April Report

Dr. William C. Riddell, secretary of the Montana Board of Medical Examiners, reports the written examination held at Helena, April 6-8, 1915. The total number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 34, of whom 23 passed and 11 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Bennett Medical College	(1913)	77.8
Hering Medical College	(1910)	77.6
Northwestern University	(1912)	76.5
Rush Medical College	(1905) 85.2; (1908) 80.7; (1913) 84;	(1914) 84.4
Medical College of Indiana	(1904)	76.2
Keokuk Medical College, Coll. of Phys. and Surgs.	(1903)	80.4
State University of Iowa, College of Medicine	(1897)	76.4
Tulane University of Louisiana	(1914)	81.8
College of Phys. and Surgs., Baltimore	(1913) 80.2;	(1914) 79.9
Kansas City Hahnemann Medical College	(1909)	76.1
Washington University, St. Louis	(1914)	85.3
John A. Creighton Med. Coll.	(1905) 79.7; (1913) 77.6;	(1914) 83.2
Jefferson Medical College	(1914)	78.1
University of Tennessee	(1907)	75.1
Vanderbilt University	(1906)	75.2
Wisconsin College of Physicians and Surgeons	(1912)	76.6
University of Christiana, Norway	(1896)	85.3

FAILED

College		
College of Physicians and Surgeons, Chicago	(1910)	67
Dearborn Medical College	(1906)	73.5
Illinois Medical College	(1903)	71.6
University of Illinois	(1914)	71.6
Keokuk Medical College, Coll. of Phys. and Surgs.	(1906)	57
Sioux City College of Medicine	(1905)	74.1
University of Louisville	(1905)	62
University College of Medicine, Richmond	(1907)	74.1
Marquette University	(1910) 61; (1914)	73.9
University of Christiania, Norway	(1904)	73.5

Minnesota June Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, June 1-4, 1915. The total number of subjects examined in was 18; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 44, of whom 42 passed and 2 failed. Six candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College	(1914) 86; (1915) 82,	87
Johns Hopkins University	(1913)	84
Harvard University	(1915)	87
Hamline University	(1904)	75
University of Minnesota	(1914) 84, 85, 87; (1915) 81, 82, 84, 85, 85, 86, 86, 86, 87, 88, 88, 88, 88, 89, 90, (1916)* 83, 84, 84, 85, 85, 86, 86, 86, 86, 86, 87 87, 87, 88, 90.	

FAILED

College		
University of Louisville	(1909)	74
Hamline University	(1904)	71

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University	(1910)	Illinois
Rush Medical College	(1903)	Illinois
Sioux City College of Medicine	(1905)	Iowa
University of Minnesota	(1910)	S. Dakota
Medical College of Virginia	(1914)	Virginia
Marquette University	(1913)	Wisconsin

* These candidates have completed a four year college term, but their diplomas are withheld pending the serving of a year's internship in an approved hospital.

South Dakota July Report

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, July 13-14, 1915. The total number of subjects examined in was 15; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 11, all of whom passed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
George Washington University	(1909)	82.3
College of Physicians and Surgeons, Chicago	(1907)	84
Northwestern University	(1914)	93.3
Rush Medical College	(1911) 88.7; (1914) 85.2, 88;	(1915) 90.7
Detroit College of Medicine	(1895)	81.4
University of Minnesota	(1915)	83.4
University of Nebraska	(1912)	85.7
University of Vienna	(1912)	84.5

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Minnesota	(1913, 2) (1914)	Minnesota
Woman's Medical College of Pennsylvania	(1912)	Colorado

The following questions were asked:

OBSTETRICS

1. Describe the female pelvis and name the bones composing the same. 2. Give cause, symptoms and treatment for puerperal eclampsia. 3. (a) What is menstruation? (b) What is vicarious menstruation? 4. How does the embryo receive nourishment? 5. Does the maternal blood enter the circulation of the child; if so, how? 6. How would you proceed when the placenta cannot be removed? 7. (a) What is abortion? (b) Miscarriage? (c) Premature labor? (d) Give treatment of threatened abortion. 8. What are the causes of albuminuria and edema during pregnancy? How would you treat the former? 9. What are the duties of a physician in a case of labor? 10. Give treatment of placenta previa when occurring before full term.

EMBRYOLOGY, HISTOLOGY AND ANATOMY

1. From what embryonic layer is the skin developed? Name all other structures developed from the same layer. 2. Describe a fetus at third month. 3. Detail histology of the skin. Make a drawing showing a hair-follicle. 4. Detail histology of adrenal gland. Where are they located? 5. Locate the thyroid gland. Give its function, blood and nerve supply. 6. Describe and locate the ethmoid bone. 7. Name the bones of the tarsus. 8. Describe the ankle-joint. 9. Describe the axilla and name its contents. 10. Give origin, course and distribution of the seventh and eighth dorsal nerves.

PATHOLOGY

1. Describe the gross appearance of the kidney in chronic interstitial nephritis. 2. How does calcareous degeneration of the arteries influence the circulation? 3. (a) What is understood by the phrase "new formation"? (b) Define the term malignant as applied to new formations. 4. What are the pathologic appearances of anemia of the brain? 5. Is cerebrospinal fever more generally sporadic or endemic? 6. What is cretinism, and with what is it associated? 7. What pathologic conditions increase the elimination of urea? 8. Describe how mitral stenosis and aortic regurgitation respectively affect the cavities and musculature of the heart. 9. Describe the formation of an acute abscess. 10. (a) On what principals are tumors classified? (b) Mention the important classes of tumors, giving an example under each class.

REGULAR THERAPEUTICS AND PRACTICE

1. What are the symptoms and signs present in acute articular rheumatism with endocarditis? 2. Give in detail, the dietetic and hygienic rules and regulations you would prescribe in a case of diabetes mellitus. 3. Explain the difference between the principals underlying vaccine therapy and serum therapy. State the character of danger in their application to the human body. 4. Give the temperature chart in each of the following diseases: (a) Typhoid fever, terminating in recovery; (b) croupous pneumonia, terminating in recovery; (c) intermittent fever (quotidian); (d) variola, terminating in death on the twelfth day. 5. Give the incubation periods of measles, scarlet fever, smallpox and chicken-pox. 6. On what theories or principles are cold baths and cold sponging resorted to? State the indications calling for these measures. 7. How would you diagnose a case of diphtheria? Describe the treatment in detail and tell when it would cease to be infectious. 8. (a) Give the therapeutic application of drugs in the different stages of pneumonia. (b) Give the comparative value of chloroform and ether as an anesthetic. 9. In the treatment of chronic interstitial nephritis, what dietetic and hygienic suggestions would you make? Name three drugs that might be employed in the treatment of this condition, with the precise reason for the employment of each. 10. In what pathologic conditions is digitalis indicated and contraindicated? Describe its action.

SURGERY

1. Differentiate between congestion and inflammation. 2. What do you understand by a dissecting aneurysm? 3. What agents are employed for the production of local anesthesia? 4. Describe the operation of exposing the brachial artery for ligation at any selected point. 5. Describe a method of reducing a backward dislocation of the forearm. 6. What would be your treatment of a fracture at the base of the skull? By what symptoms would you base your diagnosis? 7. Describe the operation for the correction of a cleft palate. 8. What site should be selected in performing a paracentesis? 9. Give symptoms and treatment of hammer-toe. 10. Differentiate between appendicitis and renal colic from the standpoint of pain, tenderness, vomiting, urine and Roentgen-ray examination.

PHYSIOLOGY

1. (a) Give functions of gallbladder. (b) When is the bile thrown into the stomach and how? 2. Give the principal characteristics of the digestive juices. 3. (a) What is the difference between the sebaceous and sudorific glands? (b) Where found and their functions? 4. (a) What is the object of respiration? (b) What changes, if any, take place in the blood during respiration? (c) What muscles enter into the mechanism of respiration? 5. (a) Describe fetal circulation. (b) How many circulations during fetal and adult life? 6. What are the various functions of the liver? 7. Name the chief ductless glands and give functions of the same. 8. (a) What is meant by secretion? (b) What is meant by excretion? Give examples. 9. (a) How do the veins differ from the arteries? (b) How is the onward flow of blood maintained in the veins? 10. Give the varieties of connective tissue and where found and their functions.

CHEMISTRY

1. What is the average composition of air? Give chemical name, formula or symbol, valence and atomic weight of each constituent. 2. Give chemical name, symbol and physical properties of each of four gases, which would produce death if inhaled. 3. Give chemical names, symbols and physical properties of three gases having no bad effects if inhaled. 4. Complete the equations and give chemical names and physical properties of the new compounds formed. $Na\ O_2$ plus $H_2\ SO_4$ equals ? $Fe\ S$ plus $H_2\ SO_4$ equals ? 5. Give chemical name, formula and physical properties of each: aqua fortis; aqua regia; aqua destillata; oil of vitriol; blue vitriol. 6. How much mercury is contained in ten grams of mercurous chlorid? The atomic weight of Hg being 200, and Cl 35. 7. What is formaldehyd chemically? Physical properties? How is it made? 8. Detail a test for strychnin. 9. Detail approximate estimation of urea. What reagent is used? What is the chemical reaction?

10. ℞ Hydrargyri chloridi mitis..... gr. xv
Potassii iodidi..... dr. i
Aquae..... q. s. ad oz. ii
Misce.

What change takes place? Describe the appearance of the mixture.

GYNECOLOGY

1. Give a probable cause and treatment of dysmenorrhea in a virgin, aged 16. 2. Detail how you would treat half a dozen interstitial fibroids of uterus, not hemorrhagic, age 30. Why? 3. Give symptoms and treatment of hypertrophic elephantiasis, without exophthalmos. 4. Give symptoms and treatment of extra-uterine pregnancy. 5. Give indication for curettement of endometrium.

HYGIENE AND SANITARY SCIENCE

1. What do you understand by malignant pustule and how would you handle the same? 2. Describe a method of aerated disinfection. 3. Describe the method of antityphoid vaccination. 4. Why is pure air more beneficial than polluted air? 5. Describe how infectious and contagious diseases are most commonly spread.

BACTERIOLOGY

1. By what laboratory methods may rabies be diagnosed? 2. Describe the *Bacillus tuberculosis*, its habitat, mode of growth and method of detection. 3. Give the function and products of bacteria. 4. (a) Give a general description of the action of agglutinins. (b) In what disease, other than typhoid, do agglutination reactions occur? 5. (a) Define ptomains. (b) Define leukomains.

SKIN AND GENITO-URINARY

1. Briefly describe eczema and give treatment. 2. Give cause, symptoms and treatment of carbuncle, intertrigo, hives. 3. Describe condylomata; give their cause and treatment. 4. Give causes, symptoms and treatment of enlarged prostate gland. 5. Describe the course of an attack of gonorrhea in the female and give treatment; mention complications which are probable.

EYE, EAR, NOSE AND THROAT

1. What is the Argyll-Robertson pupil and what does it indicate? 2. Give etiology, symptoms and treatment of trachoma. 3. Mention a half dozen common affections of the eyelids and give the treatment for them. 4. How would you treat gonorrheal conjunctivitis? 5. Give cause and treatment of chronic suppuration of the middle ear. 6. Give prophylactic treatment when mastoid disease is threatened. 7. Name at least four general diseases that affect the ear. 8. Diagnose retropharyngeal abscess and give the treatment for it. 9. Give indications for doing tracheotomy. Describe the operation. 10. How would you diagnose nasal polypi? Give treatment.

MEDICAL JURISPRUDENCE

1. How would you determine the distance from which a bullet wound from a revolver had been inflicted? 2. What stains would you look for in suspected poisoning by (a) an acid, (b) an alkali? Give the character of the stains. 3. What would be your duty, as a physician, when called to a case of suspected poison, either by accident, suicide or homicide? 4. How would you distinguish between a case of death by suicide resulting from ingestion of (a) carbolic acid, (b) hydrocyanic acid? 5. How would you determine whether an infant found dead in water had been immersed before death or after?

Book Notices

ALVEOLODENTAL PYORRHEA. By Charles C. Bass, M.D., Professor of Experimental Medicine at the Tulane Medical College, and Foster M. Johns, M.D., Instructor in the Laboratories of Clinical Medicine at the Tulane Medical College. Cloth. Price, $3.50 net. Pp. 167, with 42 illustrations. Philadelphia: W. B. Saunders Company, 1915.

The authors start out with essentially the following premise. The *Endameba buccalis* is found in pus from pyorrhea pockets. Emetin hydrochlorid injected into a patient having "alveolodental pyorrhea" causes the protozoa to disappear; in addition, the clinical appearance of the tissues involved in the disease is much improved after its use; therefore *Endameba buccalis* is the cause of pyorrhea, and emetin hydrochlorid is specific for the disease. The statement is so positively made that one at first is lead to accept it. But Koch's laws have not been satisfied; there is room for doubt as to the accuracy of the premise. Many other organisms are present in pyorrhea pockets which may be the cause of the disease. These too may be influenced by emetin, either directly or by causing changes in the tissues, rendering them unsuitable for bacterial action; therefore, one cannot unqualifiedly accept without further proof the statement that the *Endameba buccalis* is the cause of pyorrhea alveolaris. Those who have followed the writings of Barret and Smith and Bass and Johns, and attempted to verify their findings, have found amebas very constantly present in pus from pyorrhea pockets; but they have also found them present in practically all unclean mouths in which pyorrhea does not exist. Motile amebas taken from pus pockets about the roots of teeth, and observed in salt solution on a warm stage, do not differ materially from those taken from unclean mouths which are free from pyorrhea.

The statement that pyorrhea alveolaris is cured by emetin also needs further evidence. That some patients are temporarily helped there is little doubt; but that the disease is cured permanently by this drug does not coincide with general experience, and this is admitted in the book, since relapse is indicated; besides, it is acknowledged that surgical means are demanded in some cases. If the peridental membrane be so far destroyed that local treatment will not effect a cure, then no remedy which cannot restore the investing membrane will be effective. The peridental membrane being an organ, when once destroyed, cannot be restored, as is stated by the authors. This membrane when once gone leaves no means of vital attachment of the gums or other approximating tissues to the tooth's root; therefore the pockets caused as a result of destruction of the peridental membrane must remain, unless surgically obliterated. Otherwise the pockets are a constant source of reinfection.

The book contains well-stated truths and not a few fallacies. That traumatism is a fruitful source of pyorrhea as stated there is no doubt, but Talbot and others believe that there are other causes. The authors have not observed the beneficial effects of good brushing of the teeth and gums with the tooth-brush, else they would not have dwelt on the bad results of the use of the tooth-brush, and recommended gauze for cleaning the teeth. Hyperemic gums are often cured by intelligent or rather vigorous use of a stiff tooth-brush. Gauze may merely transfer the débris about the teeth to the interproximal spaces, rendering a bad condition worse. Gingivitis may lead to pyorrhea alveolaris; but not all gingival irritations are pyorrhea alveolaris, as the authors seem to believe; still, amebas may be found in almost every instance in which the gums are irritated at their margins by unwholesome surroundings, such as salivary or serumal deposits, food débris, etc., although the peridental membrane may not be in the least involved. Such a gingivitis, unless dependent on systemic disease or metallic poisons, is readily cured by thorough cleansing and friction. Pyorrhea alveolaris is difficult to cure by any known means except in its early stages. The gums in health are a dense tissue capable of standing much rough usage; indeed, if the gums and teeth do not have plenty of exercise either by the use of coarse food or by brushing, then both gums and peridental membrane become hyperemic.

The authors say (page 45), "We think that almost all are infected before they are 20 years old." If it is meant that amebas may be found in most mouths, one can easily concur in this statement; but if it is meant that all adults have pyorrhea alveolaris, experience in treating diseases of the teeth and mouth does not agree with this conclusion. Differentiation between simple gingivitis and the disease of the peridental membrane, commonly known as pyorrhea alveolaris, should be sharply drawn, as there is a vast difference between the two. The authors do not appear to recognize this distinction.

The authors doubt whether salivary calculi cause inflammation of the gums, or whether the gum inflammation causes the formation of salivary calculi (page 155). Had there been some reading of Black, Talbot, Kirk and others on such subjects, there would have been fewer errors of this kind. A reading of these authors would have given information which would have demonstrated that salivary deposits may be found on parts of artificial plates and teeth which do not come in contact with gums diseased or otherwise, and also that deposits on the roots of teeth, rootwise from the free margins of the gums, are not of salivary origin, but are probably due to inflammation. The positive statement that pyorrhea alveolaris is caused by the endameba and that emetin hydrochlorid is specific for this disease is unfortunate. It has permitted enterprising drug manufacturers to flood physicians and dentists with literature copied from those who have made these positive statements and, as a result, the drug is being used indiscriminately without sufficient knowledge to justify it.

Human Herbivore and Carnivore.—Given the presence of the two human types in one locality, what may be expected of them? History provides abundant answer. Thus in England the square-jawed Roundheads under Cromwell stirred up the country for a few years and disappeared. The hatchet-faced Puritans found England too crowded and settled a new world. Today hawk-nosed bird men rule the upper air. The carnivore is the restless pioneer, inductive, dying ever on the outskirts in search of something new. The herbivore is the sedentary stabilizer, deductive, ever at his appointed task. Both are necessary to the progress of the world, and neither can do the work of the other. It seems unlikely that the human species will ever be reduced to one type, but should this come to pass one might hazard a surmise that the surviving type would be a mixed one, perhaps three parts carnivore and one part herbivore.—John Bryant, M.D., *Boston Med. and Surg. Jour.*, Sept. 9, 1915.

Miscellany

Causes of Death in Eminent Physicians

Hermann Vierordt, son of the founder of clinical sphygmography, has recently published a study of the causes of death of various medical celebrities (*Med. Klin.*, 1915, xi, 499, 525, 549) similar in character to his book (1893) on the abnormities and diseases of famous historical and literary characters (Medizinisches aus der Geschichte, Ed. 3, Tübingen, 1910). In 1907, the late Dr. William Pepper published a study of "Diseases of Great Physicians of the Past" (*Med. Lib. and Hist. Jour.*, 1907, v, 273) to which Vierordt's list, mainly German, may be regarded as supplementary, as most of his items are modern. Pepper gives us many quaint and curious details, such as the fact that Dr. Guillotin did not die of the guillotin, as is claimed; Dupuytren's statement that "he would rather end his life through God's hand than that of a surgeon"; Sir Theodore Mayerne's prediction of the time of his own death, and the fatal duel between Drs. Williams and Bennet of Jamaica (1750), which originated in a controversy about their views on the nature of bilious "fever."

Combining the data of Pepper and Vierordt, we find that the most common cause of death in these brain-workers is apoplexy, of which there are no less than thirty-six cases, including Scultetus (1645), Harvey (1657), Malpighi (1694), Ramazzini (1714), Linnaeus (1778), Stoll (1788), Monro 2d (1817), Jenner (1823), Pinel (1826), Young (1829), Sprengel (1833), Neissner (1860), Baudelocque (1864), Malgaigne (1865), Pfeuffer (1869), Carl Livi (1876), Stokes (1878), Buchheim (1879), Schwann (1882), Bevill Peacock (1882), Ritter von Rittershain (1883), Fechner (1889), Helmholtz (1894), Henke (1896), Fick (1901), Max Nitze (1906), Ponfick (1913) and Julius Pagel (1912). Physicians, no doubt from the drive and worry of their active lives, seem particularly liable to disorders of the circulation. Thus Lancisi (1820), Boerhaave (1738), Morgagni (1771), Currie (1805), Corvisart (1821), John Bell (1838), Richard Bright (1858), Bezold (1868), Ritter von Hoffmann (1897), Sir W. T. Gairdner (1907), Koch (1910) and Angelo Celli (1914) died of heart disease; John Hunter (1793), Sir Charles Bell (1842), Sir James G. Simpson (1870) and Augustus Waller (1870) of angina pectoris; Liston (1847), Morel Lavallée (1865), Gustav Simon (1876), Murchison (1879), Nikolaus Friedreich (1882), Hilton Fagge (1883) and Baelz (1913) of aortic aneurysm, and Wepfer (1695), the historian A. Hirsch (1894) and Heineke (1901) of "calcification of arteries." Tuberculosis, also apparently one of the greatest enemies of the doctor himself, carried off Swammerdam (1680), Zinn (1759), J. G. C. von Siebold (1798), Bichat (1802), Robert Willan (1812), Bayle (1816), Mathew Baillie (1823), Laennec (1826), Canstatt (1850) and Lockhart Clarke (1880).

Van Helmont (1864) and Dupuytren (1835) died of pleurisy, and the physician-poet Mark Akenside (1770)—whose name Vierordt distorts into "Mark A. Kenside"—and Valleix (1885) of diphtheria. Gout numbered among its victims Scaliger (1558), Jerome Cardan (1596), Sydenham (1689), Linnaeus (1778), William Hunter (1783), Berzelius (1848), Corrigan (1880) and Cohnheim (1884). Smallpox killed Caspari (1828), Döllinger (1841), John Bostock (1841) and Henry Gray (1868); cancer, Lorenzo Bellini (1704), Sir Benjamin Brodie (1862), Mikulicz (1905) and Möbius (1907); septicemia, Spigelius (1625), Claude Perrault (1688), William Hewson (1774) and Kolletschka (1847); typhoid fever, Rush (1813), Spurzheim (1832), William Wallace (1838), Deiters (1863), Oppolzer (1871) and Meyer, the describer of adenoid vegetations, (1895); typhus fever, Reil (1813), John Syng Dorsey (1818) and G. Cornet (1915); dysentery, Thomas Hodgkin (1866), and erysipelas, K. W. Jacob (1858) and Moleschott (1893). Claude Bernard (1878) and Pasteur (1895) succumbed to uremic seizures; Neumeyer (1871) and Liebermeister (1901) to sarcoma of the kidney; Haller (1777) and Scarpa (1832) to cystitis; Riolan (1657), Rivinus (1723) and Portal (1832) to urinary calculus; Jobert de Lamballe

(1867), Theodor Simon (1874) and Karl Schroeder (1887) to brain disease; Bronssais (1838) to hemorrhagic colitis, and W. E. Horner (1853), Griesinger (1868), Middeldorpf (1868) and F. W. L. Bischoff (1882) to perforative typhlitis or appendicitis.

Wirsung (1643) and Delpech (1832) were assassinated; Desault (1795) may have been poisoned; Servetus (1553) was burned; J. von Jessen (1621) and Struensee (1722) were beheaded; Carpue (1846), C. Waller (1862), Bouvier (1877), Pagenstecher (1879), von Gudden (1886), drowned in the Starnberger Sea, while struggling with the insane monarch, Ludwig II of Bavaria, during his last moments), R. Carmichael (1887), Wernicke (1905) and Oscar Lassar (1907) met violent death by accident, and John Aitken (1790), Horace Wells (1848), Michaelis (1848), von Baerensprung (1864), Treitz (1872), Victor Hanot (1896), M. von Pettenkofer (1901) and perhaps Joseph Toynbee (1866) committed suicide. To the list of assassinations should be added Lehr's extensive martyrology of physicians and asylum attendants killed by insane patients.

Electrocardiography

The electrocardiograph is a rather expensive, recently invented instrument, requiring some skill in its use. This probably accounts for the fact that the great majority of medical men have no detailed knowledge either as to the instrument itself or as to its value as a diagnostic aid. A brief review of the subject will therefore be worth while.

The contraction of the muscular walls of the heart set up electrical currents known as action currents. When these currents are conducted from the patient to a sensitive string galvanometer (a silver thread approximately 1/25,000 inch in diameter suspended between the poles of a magnet) definite movements of the string result. These movements are photographed by a moving plate or film. The resulting picture is an electrocardiogram and, in reality, is a graphic portrayal of the cardiac action. Extensive experimental work by Einthoven, the inventor of the electrocardiograph, by Thomas Lewis and others, has demonstrated the significance of the various points in such a tracing and the alterations in this picture that occur in various pathologic conditions have become definitely established.

With the aid of the electrocardiograph it has been almost indisputably proved (Eyster and Meek, Experiments on the Origin and Propagation of the Impulse in the Heart, *Heart*, 1914, v, 119) that the impulse which causes the heart to beat arises in a specific bundle of muscle fibers in the roof of the right auricle, known as the sinus node. This impulse is conveyed to the various chambers of the heart by a distinct system of fibers. When other points in this system become more irritable than the sinus node, a contraction impulse may arise here, and an extra beat or so-called extrasystole results. Whether such an impulse originates in the auricle, in the right or left ventricle or in the junctional tissues between the auricles and ventricles may be determined with the electrocardiograph. The large group of cardiac irregularities caused by extrasystoles has thus been definitely classified. An irregular pulse is often a matter of great concern to both the patient and the physician, and the electrocardiograph is an essential aid in determining whether an irregularity is of grave import or whether it is an extrasystole and of little significance.

Examples of heart block give a characteristic tracing. Since an auricular contraction results in a definite wave followed in a short interval by a series of waves depicting the ventricular contraction, any disturbance between the number and regularity of the auricular and ventricular beats is graphically portrayed. If there is a complete blocking of the impulse in its passage from the auricle to the ventricle through the bundle of His the auricular waves in the tracing are much more numerous than the ventricular waves and have no relation to them. This is the result of the independent rhythm of the auricles and ventricles that is established in complete block. If the blocking is only partial every second or third auricular impulse gets through the bundle of His and is followed by a ventricular contraction.

The advent of the electrocardiograph has established a heretofore unknown type of heart irregularity, auricular fibrillation, and one that is probably more frequently encountered than any other. In this condition the auricular musculature is fibrillating and instead of 60 to 80 strong auricular contractions per minute there may be as many as 400 to 500 pseudocontractions. Few of these impulses get through the bundle of His and the result is a markedly irregular pulse. Such a tracing contains numerous small auricular waves bearing no relation to each other and only an occasional one followed by a ventricular systole. When auricular fibrillation is suspected on physical examination an electrocardiogram is an invaluable help in establishing the diagnosis.

Information concerning the myocardium as a whole is also furnished. Hypertrophy of the auricles or of the ventricles is represented by an increase in the height of the auricular or ventricular waves. In mitral stenosis an increase in the height of the auricular wave has often called attention to a lesion which has not been suspected on physical examination. Recently it has been possible to take tracings representative of the heart tones and thus murmurs and their relation to the cardiac cycle are accurately recorded.

Physicians and the Hall of Fame

The *British Medical Journal* thus comments on the tabulation by Mr. Pickering in *Science* of the votes at the three elections of the American Hall of Fame:

"Politicians head the list. Next come authors. It is significant of the value of popular judgment that while of eleven writers of fiction nine were elected, of ten authors who dealt with serious subjects, only three gained the *arbitrium popularis aurai*. Next come soldiers and sailors. Doctors hold a low position, but this is not surprising, as medicine is not a profession which leads to popular fame among Anglo-Saxon peoples. What is surprising is that in a country like America which swarms with inventors, and where the cult of the 'almighty dollar' is generally believed to be so prevalent, engineers and business men are nearly at the bottom of the list. 'Philanthropists' stand lowest of all. The list suggests some curious reflections as to the mentality of the American people, but it would be rash to draw any definite conclusion from the figures. The system of voting is probably accountable for the strangeness of the results, for till now the judges have been literary men who may be assumed to have been more familiar with the work of authors than with that of men whose activity was displayed in other fields. Even allowing for this, it is remarkable that among so practical a people fiction should hold the place of honor in literature; and it is hard, as Mr. Pickering says, 'to believe that there are . . . twelve authors more famous than any American missionary, physician, engineer, or business man.'"

Improvement in Milk Supply

The National Clean Milk Society of London is making an effort to raise the hygienic standard of milk and milk products sold in London, and to educate the public as to the importance of a clean and wholesome milk supply. According to A. E. Ingram, U. S. consul at Bradford, when the milk and dairies act of 1914 was passed an effort was made to have a provision inserted for certified milk such as is now produced in the United States. The provision failed of adoption. Efforts are also being made to have the scorecard system of dairy inspection adopted such as is used in the United States. The city of Bradford has already adopted the plan. The British Board of Agriculture is encouraging the formation of milk recording societies. It is said that heretofore the dairy men have not appreciated the value of milk records. Up to March, 1915, only sixteen societies have been formed throughout the country.

Medicolegal

Amount Physicians May Prescribe Under Harrison Antinarcotic Law

(United States vs. Friedman (U. S.), 224 Fed. R. 276)

The United States District Court, Western District of Tennessee, sustains a demurrer to, and quashes, an indictment that charged the defendant with having dispensed, distributed, and prescribed gum opium and powdered opium, the derivatives, compounds, and preparations thereof, to wit, morphin sulphate, heroin, and cocain, a derivative of coca leaves, without the dispensing, distribution, and prescription as aforesaid being in the course of his professional practice; that is to say, that he dispensed, distributed, and prescribed the aforesaid drugs in quantities more than was necessary to meet the immediate needs of a patient, and did not distribute, dispense, and prescribe the drugs in good faith and as a medicine. The court says that the indictment was drawn under Section 2 of the Act of Congress approved Dec. 17, 1914, known as the Harrison Antinarcotic Law. An attentive examination of the indictment disclosed that the offense with which the defendant was charged was dispensing, distributing, and prescribing the prohibited drugs in quantities more than was necessary to meet the needs of a patient, and that they were not distributed, dispensed, and prescribed in good faith and as a medicine. As the court understands Section 2 of the Act, the only thing required of a person, who shall give an order as provided in said section for the drugs mentioned in the act, is that he shall make or cause to be made, at the time of giving the order, a duplicate thereof, on a form issued by the commissioner of internal revenue, and in case of the acceptance of said order he shall preserve such duplicate for two years. The defendant was not indicted for failure to do either of these last-mentioned things. Subsection "a" of Section 2 provides that nothing contained in the section shall apply to physicians, dentists, or veterinary surgeons, registered under the act, who dispense or distribute any of the drugs in the course of their professional practice, provided that they shall keep a record of all of such drugs dispensed or distributed, showing the amount dispensed or distributed, the date, and the name and address of the patient to whom such drugs are dispensed or distributed, unless the physician shall administer them personally to the patient. But the defendant was not indicted for violation of subsection "a," but, as has been said, he was indicted for giving a prescription for said drugs in quantities more than was necessary, and not in good faith and as a medicine. The court fails to find in the act of Congress under examination any language making the doing of the things with which the defendant was charged a violation of law. In other words, there is no limit fixed to the amount of said drugs that a physician may prescribe, nor is there any duty imposed on him, other than to keep a record of all such drugs dispensed by him, and the name and address of the patient, except those to whom he may personally administer, and that he must preserve the records for a period of two years. For failure to do either of these things the defendant was not indicted. The result is the court holds good a demurrer to the effect that the acts of the defendant averred in the indictment are not prohibited by law, nor are they in violation of any law of the United States.

Constitutionality of the Harrison Antinarcotic Law

(United States vs. Brown (U. S.), 224 Fed. R. 135)

The United States District Court in the Western District of the State of Washington overrules a demurrer to an indictment charging the defendant with unlawfully having in his possession and under his control about 3 drams of "yen shee," a derivative and preparation of opium, he not having registered nor paid the special tax as required by the Act of Congress of December 17, 1914. The demurrer was filed on the ground that the indictment did not state facts sufficient to constitute an offense under any valid or constitutional law of the United States. It was contended that the support of the indictment, if any, must come from Section 8 of the act referred to, and that this section, which makes it unlawful for any person who has not registered and paid the special tax as provided by this act to have in his possession or under his control any opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof, is unconstitutional, in that it is an attempt on the part of Congress to encroach on the police power of the several states; that the only right Congress has to control the sale of a commodity, within the provisions of the Constitution, is (a) to regulate commerce; (b) the right of taxation; and neither of these rights is invoked by Section 8. But the court says it thinks it may assume, and will take judicial notice of the fact, that no opium is grown or produced in this country, and that the purpose of the act is to prohibit the importation of opium. The purpose of Congress being to prohibit the importation, manufacture, or sale of the drugs described, and by this act the drug having become an "outlaw" in the country, Congress has a right to trace its presence, and has the power to punish any person in whose possession this "outlawed" article may be found. The possession of such drug or control thereof is made presumptive evidence of the unlawful importation, manufacture, etc., as well as an obligation to pay the special tax provided by the act, and a failure to register and pay the tax as provided would be a fraud on the United States, in that it deprived the government of the revenues provided by the act. Congress, having the power to exclude the drug entirely from the United States, and the right to regulate its relation to interstate commerce, and to levy a tax, must be held to have the right to make it unlawful for any person who has not complied with the provisions of the act by registration or paying a tax, to have in his possession this "outlawed" article. The act must be construed as a whole, and force given to every part when this can be done.

Indictable Use by Physicians of Mails to Defraud

(United States vs. Baxter et al. (U. S.), 221 Fed. R. 473)

The United States District Court, Northern District of California, overrules a demurrer to an indictment for using the mails in furtherance of a scheme to defraud. The court says that the scheme, as set forth in the indictment, was that the defendants, as physicians, should by means of advertisements induce certain persons named in the indictment, and others to the grand jurors unknown, to communicate with them relative to real or supposed ailments. That the defendants should then, by means of letters and through the postoffice department, and irrespective of any symptoms communicated to them, and even in cases in which the symptoms indicated health, rather than disease, and without any real knowledge of the condition of the person so induced to communicate with them, state to such person that he was afflicted with a disease which the defendants could cure, and that they would furnish treatment for such disease for a certain sum of money, and by means of such letters would induce such person to send them money for the purpose of procuring medicine and treatments skilfully and properly designed and prepared for the cure of the disease with which such person was afflicted, or had been induced by them to believe himself afflicted, which money they would fraudulently convert to their own use. That in return for such money they should send to such person certain medicines of little or no value, and not medicine and treatment skilfully and properly designed and prepared for the cure of such person, the defendants having no real or proper knowledge of such person's condition, or whether he was diseased or not, or whether or not such purported medicine was capable of benefiting such person, as they well knew. It was contended on the demurrer to the indictment that for many reasons the foregoing scheme was not one to defraud within the meaning of Section 215 of the criminal code. But to this contention the court is unable to agree. When it is averred that a physician has devised a scheme to defraud, by stating to one who offers himself as a patient that such person is afflicted with a disease which the physi-

cian can cure, and this irrespective of the symptoms, and whether or not the symptoms indicate health rather than disease, and without any real knowledge of the condition of such person, and by such statement should cause and induce such person to send him money, for which he would send in return medicine of little or no value, and not medicine skilfully and properly designed and prepared for the cure of the disease with which such person was afflicted, or had been induced by such physician to believe that he was afflicted, the court thinks it clearly appears that the physician was engaged in one of the most reprehensible schemes to defraud of which the law can take cognizance. It may, indeed, be quite true that medicine is not an exact science, and that there is a wide divergence of opinion, even among reputable physicians, as to what is the proper method of treatment for any particular disease. But this fact is beside the mark here. All such treatments contemplate at least good faith on the part of the physician, and are not based on a deliberate design on his part to procure money from a person who, so far as the physician knows or has reason to believe, is in sound health, by stating to him that he is afflicted with a disease; and this is true, whether resort be had to the use of the mails or not. The design as alleged may not be easily proved; but it is a design to defraud, and the indictment is sufficient.

A Limited Partnership Between Physicians and Their Liability for Malpractice

(Pier vs. Cauley et al. (Neb.), 152 N. W. R. 298)

The Supreme Court of Nebraska, in reversing a judgment rendered in favor of the defendants, two physicians sued for malpractice, and remanding the cause for further proceedings, holds good, as against a joint demurrer, a petition which charges concurrent and inseparable acts of negligence, which result in injury to the patient, against two physicians charged with the care and treatment of the patient. The court says that the plaintiff alleged that the defendants, Drs. Cauley and Allenberger, one of whom practiced at one place, and the other at another, had an arrangement with each other whereby, in cases in which Dr. Cauley was called in his professional capacity to attend and treat a patient for a wound or physical injury of any kind, and particularly when he was called in a case which needed or required a surgical operation or treatment, he was to call Dr. Allenberger in consultation and to aid and cooperate with him in such treatment and operation, and was to charge his patient for the services of each of them. That the plaintiff broke her leg below the knee in such a manner that the bones protruded from the wound and dirt and foreign substances were admitted therein. That Dr. Cauley was called to treat the case, but negligently omitted to remove from the wound the dirt and foreign substances, and negligently failed properly to treat the injury or reset the broken bones, in addition to which he urged the plaintiff's parents to cause her removal to a hospital in the city where Dr. Allenberger was located, and where Dr. Allenberger was, pursuant to the arrangement before mentioned, called by Dr. Cauley to come and aid him in the treatment of the case, and that Dr. Allenberger, with the knowledge and consent of Dr. Cauley, and pursuant to said arrangement with him, continued unskilfully and negligently to treat the plaintiff for said injury for a period of over nine weeks. That, as soon as the plaintiff's parents learned her true condition and of the alleged negligent and incompetent treatment, they took her to another surgeon, who amputated her leg, the amputation being necessary to save her life and made necessary by the "negligence, unskilfulness, and carelessness of said defendant." The defendants filed a joint demurrer to the plaintiff's petition on the grounds that the several causes of action therein stated were improperly joined, and that there was a misjoinder and a defect of parties defendant. The demurrer in effect admitted the truth of all the allegations of the petition, one of which was with regard to the arrangement or agreement between the defendants, before mentioned. The effect of this agreement was to create a limited partnership. No separate cause of action was necessarily stated against Dr. Cauley, because the acts of negligence charged were continuing acts, beginning with his first failure to cleanse the wound, and extending throughout the time that the patient was under the care of himself and his special partner, Dr. Allenberger. Counsel for the defendants cited a number of authorities in support of their contention that the petition stated two causes of action, one for the wrongful acts and omissions of Dr. Cauley while acting alone, and another for the acts and omissions of the two physicians while acting jointly; but in the cases cited there was no concerted action between the different defendants, but each of the wrongdoers acted independently of all others, although the effect of what they did merged and produced the injury. If the defendants acted separately, each independently of the other, there being no concert of action between the two, there would be no joint liability; but if their acts were concurrent and inseparable, and, taken together, produced the injury alleged, they were jointly liable therefor.

Standard for Measuring the Nuisance Qualities of a Noise

(Wahrer vs. Aldrich (Wis.), 152 N. W. R. 456)

The Supreme Court of Wisconsin affirms a judgment holding that a proprietor of a hotel was not entitled to have the operation of a neighboring roller skating rink permanently enjoined, but only later than 10 o'clock at night. The court says that, as would be expected in a case of this kind, there was a wide range in the testimony regarding the volume of noise made by the rink. Some described it as very loud and annoying and others as nothing out of the ordinary. All practically agreed that the noise made by the skating was that of a rather loud rumbling noise—much like that of a train passing over a bridge. Some found the music pleasant, some unpleasant, and on others it seemed to have made no particular impression. There was medical testimony to the effect that the noise was not of a kind physically to annoy persons of ordinary sensibilities. The court thinks that the evidence supported a finding of fact to the effect that the operation of the rink, as conducted, was not physically annoying to any of the permanent residents, of ordinary sensibilities, in the neighborhood. The standard for measuring the nuisance qualities of the noise was its effect on a person of ordinary sensibilities. It was to be gaged neither by a neurotic nor a phlegmatic temperament. To constitute a nuisance, it must be physically annoying; it was not sufficient for it to offend mere taste or what was ideally desirable. An actual effect of discomfort must be produced by it on the average nervous organization before courts would interfere.

Examination by Physicians for Defense After Exhibition to Jury

(Houston & T. C. R. Co. vs. Bukowsky (Tex.), 175 S. W. R. 477)

The Court of Civil Appeals of Texas, in affirming a judgment in favor of the defendant railroad company, in this personal injury case, holds that there was no error in refusing to permit two physicians to examine the plaintiff's foot outside of the courtroom, and not in the presence of the jury, with the view of determining whether or not he was in fact injured as claimed by him, and thereafter testifying as to the result of their examination, which, it was contended, would have disclosed that the plaintiff was malingering, and that his foot was not in fact injured. The court says that it was not shown that a full examination could not have been made by the physicians in the courtroom and in the presence of the jury. Where the plaintiff voluntarily submits to a personal examination in the presence of the jury by physicians of his own selection, who testify with reference thereto, then it would be error to refuse to permit the opposite side to examine him by its physicians for the purpose of controverting the result of the examination as testified to by his own witnesses; and for this purpose, if it is made to appear that such examination cannot be made by the opposing witnesses in the presence of the jury, it would be the duty of the court to permit them to make such examination apart from the jury. This case, however, did not come within this rule.

Society Proceedings

COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Chicago, Oct. 5-7.
American Association of Railway Surgeons, Chicago, Oct. 13-15.
Am. Assn. for Study and Prevention of Inf. Mortality, Phila., Nov. 10-12.
Colorado State Medical Society, Denver, Oct. 5-9.
Delaware State Medical Society, Wilmington, Oct. 11-12.
Idaho State Medical Association, Lewiston, Oct. 6-8.
Medical Association of the Southwest, Oklahoma City, Oct. 12-13.
Mississippi Valley Medical Association, Lexington, Ky., Oct. 19-21.
National Assn. for the Study of Pellagra, Columbia, S. C., Oct. 21-22.
Southern Medical Association, Dallas, Tex., Nov. 8-11.
Vermont State Medical Society, Burlington, Oct. 14-15.
Virginia State Medical Society, Richmond, Oct. 26-28.
Wisconsin State Medical Society, Milwaukee, Oct. 6-8.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Eighth Annual Meeting held at Pittsburgh, Sept. 14-16, 1915

The President, DR. CHARLES L. BONIFIELD, Cincinnati, in the Chair.

Local Anesthesia in Herniotomy

DR. J. H. JACOBSON, Toledo, Ohio: Among 124 operations done by me there have been no deaths. My experience with this method has convinced me that whenever possible, such operations should be performed under local anesthesia. The only exception to this rule should be in herniotomy in children and when the operation must be performed in uncontrollable nervous adults. In only three of the operations was it necessary to complete the operation with a slight amount of ether. These were among the earlier operations.

I have never observed the slightest toxic effect from the use of the 0.5 per cent. novocain and epinephrin solutions which I have employed for these operations.

DISCUSSION

DR. JOHN W. KEEFE, Providence, R. I.: My experience is in accord with that of the essayist. Most of the operations for inguinal hernia can and should be done under local anesthesia.

DR. ALBERT VANDER VEER, Albany, N. Y.: A hernia operation should not be undertaken in children under local anesthesia. A general anesthetic is best for that purpose.

DR. WILLIAM H. HUMISTON, Cleveland: In following an exclusive method of anesthesia, one is inclined to make every case submit to that form of anesthesia, and in my early work I soon found out that this is poor judgment. We must select our cases.

Case of Intestinal Obstruction and Volvulus

DR. RUFUS B. HALL, Cincinnati: This case of intestinal obstruction and volvulus was caused by a large gallstone. The profession generally does not regard gallstones in which the patient is not a great sufferer as a surgical condition. These patients are treated by physicians, with very indefinite results, so far as any permanent relief is concerned, the symptoms being variously described by such vague terms as indigestion, neuralgia, gastritis, etc. They are surgical cases and I recommend exploratory operation in all those chronic cases in which there is a clear past history of one or more acute attacks. In those cases in which the stone, through ulceration, passes into the bowel, the patient is subjected to great danger, even if he does survive. When intestinal obstruction occurs, it is so many years after the acute attack that the real cause is not recognized until revealed at the operation or necropsy. The long history of gallstone is ignored or forgotten.

DISCUSSION

DR. HUGO O. PANTZER, Indianapolis: The first case of this kind was reported by Dr. Elsner, of Rochester, N. Y., about twenty years ago. There was a history of gallbladder trouble attended by attacks of acute obstruction. In each of the attacks, a different part of the abdomen appeared to be the seat of obstruction. Finally, the stone was passed per rectum.

DR. GORDON K. DICKINSON, Jersey City, N. J.: If 30 per cent. is our accurate diagnostic average in the abdomen, then operation should be done promptly, and more on suspicion than on an accurate diagnosis, more on opinion that something is wrong than to wait until we feel that something is positively and surgically bad. In going over my cases I find that death in many of them was due to dilatation of the right side of the heart, which comes on quickly after an abdominal operation, partly due to the anesthetic, and partly due to the condition of the heart before operation.

DR. J. HENRY CARSTENS, Detroit, Mich.: We do not perform these operations early enough. If we can make a diagnosis and resort to an exploratory operation promptly, we would not have so many of these cases terminate fatally.

DR. MAGNUS A. TATE, Cincinnati: Five years ago I saw a woman, 60 years of age, who had been complaining of progressive pain and tenderness for a number of years. One day she was taken with severe continuous vomiting, and the abdomen was distended. She refused to undergo an operation. Later she was operated on, and a stone, 2½ inches in size, was found in the intestine, about 6 inches from the gallbladder. The intestine was gangrenous and ready to burst. In making the resection a portion of the contents escaped into the abdominal cavity. The patient went into a state of collapse and died about three hours after the operation.

DR. JOHN F. ERDMANN, New York: I have had five cases of intestinal obstruction from gallstone in the past ten years, and of this number four patients died. Strange to say, the recovery was in a woman 72 years of age on whom I did an enterostomy and appendectomy. She also had a large tumor of the right ovary which was mistaken for an appendicitis.

DR. HERMAN E. HAYD, Buffalo: I recall a patient, a woman, 79 years of age, who had practically no symptoms. So far as the passage of a stone is concerned, she never had an attack of violent pain, and yet the stone found was as large as a small hen's egg. I was called to see her when she was having fecal vomiting. She vomited for two days. I operated, removed the stone, and she lived five days after the operation. There was no history of ulceration or of an inflammatory attack. The stone was found in the bowel and the symptoms were those of intestinal obstruction.

DR. ALBERT VANDER VEER, Albany, N. Y.: A patient whom I had attended some fifteen years previously was taken very ill and had what we supposed was an acute jaundice. He recovered from this attack and lived fifteen years afterward in good health. At the time of death, I was allowed to make a necropsy. We suspected he had some malignant disease of the intestinal tract. I found a direct communication between the neck of the gallbladder and the beginning of the transverse colon. I believe this man in his previous illness had passed through a form of sickness that had resulted in relieving the gallbladder of gallstones, and they had passed out through the large intestine. The fistulous tract gave him no great inconvenience.

DR. CHARLES L. ILL, Newark, N. J.: In forty patients operated on by my brother and myself we found three large gallstones in the small intestine. In one case we found a mass between the small intestine and the gallbladder. Three large gallstones were passed through ulceration into the intestine, caused obstruction, and killed the patients.

DR. D. TODD GILLIAM, Columbus, Ohio: When we speak of being unable to find a gallstone or gallstones near the lower part of the ileum, there is reason for it. The upper part of the intestinal canal is larger in caliber than the lower, and a gallstone will pass down pretty well toward the entrance of the ileocecal region before it becomes arrested, and the lower part of the ileum is less distensible than the upper part. Whenever we find great distention of the abdomen along with obstruction, it should always remind us of gallstones.

DR. JOHN NORVAL BELL, Detroit: A woman, 67 years of age who had never had any pain, but simply heaviness and fulness, had a palpable tumor of good size. It was hard to determine its nature. On opening the abdomen I found it was a large thickened gallbladder full of stones.

DR. WILLIAM EDWARD DARNALL, Atlantic City, N. J.: I recall a patient I saw a year or two ago on whom I oper-

ated after the diagnosis of appendicitis with all of its symptoms, and I found a small collection of pus and in it a stone (undoubtedly an enterolith) about the size of a goose egg. It was about one-eighth of an inch thick, with a hard shell of calcium salts. Such accumulations of bile salts under some circumstances go on to form a full gallstone.

Cholecystectomy Versus Cholecystostomy

DR. L. W. SWOPE, Pittsburgh: No absolute rule can be laid down to guide one in determining when cholecystectomy is preferable to cholecystostomy, yet there should be some way of ascertaining why the percentage of cures is higher after removal of the gallbladder than after draining. From the former cases in the patients who survived operation and answered my inquiries I get a report of 96.8 per cent. cures, and the remainder suffer from symptoms probably indicating associated gastric or pancreatic disease. On the other hand, in cholecystostomy, there were only 74.8 per cent. of cures, the remainder being no better and many of them worse than before operation. In considering the latter it is, of course, true that in many of them the disease was so advanced and adhesions so extensive that removal of the gallbladder was out of the question because of the high mortality in such cases. There are still a large number in which it seems to be reasonable to suppose that better permanent results would have been obtained by removal of the gallbladder instead of drainage. This argument receives verification in the results obtained in the two-stage operation where for some reason we decided to drain the gallbladder at the first operation and remove it from four to eight weeks later. The dangers of cholecystectomy include the possibility of injuring the ducts, vessels and surrounding viscera from the manipulations necessary to free the adhesions. When adhesions are so extensive that the removal of the gallbladder would be attended with marked traumatism and leave large areas of raw surfaces to be covered, then because the primary mortality is so high and the hope that subsequent complications will not arise is so uncertain, I believe better results are obtained by drainage of the gallbladder. While a diseased gallbladder, like a diseased appendix, should always be removed when possible, still there are exceptions. Because primary removal of the gallbladder opens up so many tracts for the possible extension of infection, and because experience has shown that occasionally a patient does die from acute sepsis in infections of this kind, I am convinced that such a gallbladder should be drained with as little manipulation as possible. Then at the end of from four to eight weeks, if recovery is comparatively complete, the gallbladder should be removed, as these patients are the ones who are left with a chronic infection which advances so insidiously that years may elapse before a return of symptoms, but when they do return the involvement of the upper abdomen is frequently too extensive to permit complete removal and ultimate cure. These cases also offer favorable sites for subsequent malignant degeneration. In advocating cholecystostomy in infective cases I do not include hydrops and chronic empyema of the gallbladder in a quiescent state, as cholecystectomy is safer when the infection has ceased to be active.

DISCUSSION

DR. JOHN F. ERDMANN, New York: As to cholecystectomy versus cholecystostomy, activity, efficiency and morbidity are the things we should consider in order to reduce the mortality to the lowest point. Anything that would increase efficiency must of necessity decrease morbidity, and cholecystectomy without any question limits morbidity and increases efficiency. As a result of my statistics I have been doing cholecystectomy practically in every case. There are some cases, however, in which we must do cholecystostomy.

DR. C. S. FOSTER, Pittsburgh: There is an indication for removing gallbladders that cause no symptoms. For instance, if we suspect the ducts to be enlarged and the glands enlarged down along the ducts, independently of pancreatic disease or of involvement of the viscera of the stomach, such a gallbladder is infected and ought to be taken out.

DR. JOHN W. KEEFE, Providence, R. I.: We ought not to operate during the acute stage of inflammation in gallbladder disease. Occasionally, we will have perforation and gangrene, and there will be a few cases in which it is necessary to operate during that period, but if one can keep away from operation and wait until convalescence is established, he will meet with greater success when he does operate.

DR. FRANCIS REDER, St. Louis, Mo.: With regard to feeding a patient deprived of bile salts on ox-gall, if you are reasonably certain that the patient's bile is in a normal condition you can feed that patient with his own bile by simply making him drink it.

Unusual Contents (Kidney) of Inguinal Hernia

DR. CHARLES W. MOOTS, Toledo, Ohio: A woman, aged 38, had never suffered any illness necessitating her remaining in bed. About nine years ago she noticed a lump the size of a hickory nut in the region of the right internal abdominal ring. It remained about the same for eight years, when it came lower and appeared to double in size. At this time it also became very painful. Operation was performed Aug. 22, 1914, under local anesthesia. I made the usual skin incision and then found that the mass could not be pushed upward into the inguinal canal as it was adherent to the labium majus. An elliptical portion of the labium majus was excised in order to free the mass, which now gave me the impression that I was dealing with a kidney. However, it being almost beyond the point of identification, an opening was made in the peritoneum, when the right kidney space was explored and found empty. The left kidney was normal in size, location and consistence. A nephrectomy of the useless right kidney was done and the inguinal canal closed in the usual manner. The kidney was composed of a mass of small cysts about one-half inch in diameter.

A Prognostic Sign in Acute Suppurative Peritonitis

DR. HUGO O. PANTZER, Indianapolis: The presence within the abdomen in cases of peritonitis of a free or encapsulated serous or seropurulent fluid, which is practically without odor, by the side of encapsulated foul material, indicates a strong systemic defensive activity of distinct prognostic value. A male baby, 6 months of age, had become acutely ill and at once revealed the characteristic signs and symptoms of an acute general peritonitis of probable appendiceal origin. The temperature was 104 F., pulse feeble, and 170 to the minute. At operation there was found much free fluid within the abdomen, cloudy with pus, but odorless; and about the ileocecal coil were extensive adhesions enclosing an abscess containing about 45 c.c. of creamy and extremely foul pus, and the gangrenous appendix. The case seemed utterly hopeless, yet it turned straightway to recovery. With three drainage tubes within the abdomen the very next day the child was found cooing merrily and taking its mother's milk, and from that time on it began to recover speedily.

Abnormality of Sigmoid

DR. BUDD VAN SWERINGEN, Fort Wayne, Ind.: A woman, 37 years of age, had suffered from childhood with constipation. Palpation of the abdomen elicited tenderness and tumefaction in both flanks. By the vagina a mass in the left side was felt to be very hard and larger than one on the right. The abdomen was opened. The omentum was firmly adherent on the left side; a tubo-ovarian abscess on the right side was removed, also the appendix. In enucleating the left tube and ovary, which were very intimately adherent to the sigmoid, there was uncovered a cylindrical structure about 6 inches long, apparently coming out of the side of the sigmoid and entering the lateral aspect of the rectum. After freeing it, it was thought to be a diverticulum open at one or both ends. As the main channel of the bowel was thought to be still uncovered the diverticulum was ligated at the sigmoid and rectal attachments and removed. Preliminary to closure of the abdomen water was run into the rectum. The sigmoid and descending colon could not be filled. We had evidently destroyed the only passageway between the rectum and colon. We therefore anastomosed the rectum and sigmoid by the Noble method at the site of the former channel. The woman made a satisfactory but

prolonged convalescence, and went home with a fecal fistula for which she was successfully operated May 11, 1915.

Mesenteric Thrombosis; Report of Two Cases

DR. WILLIAM EDGAR DARNALL, Atlantic City, N. J.: Infection plays a decidedly more important part in the etiology of mesenteric thromboses than we have thought in the past. Cases of acute mesenteric thrombosis are the result largely of some focus of infection, such as appendicitis, gallbladder infection, ulceration of the intestine or even of metastasis from a more distant focus. The superior mesenteric artery is most often the seat of the trouble. Any other treatment than operative need not be considered. Resection of the involved intestine is usually done, but many patients have been lost who possibly might have recovered if the anastomosis had been delayed and a secondary operation done later. The reason for this is that one cannot be certain that the gangrene has reached its limit and will not extend farther and that the complete operation is apt to involve more time and trauma than the patient can stand. These patients are usually in bad condition when they come for operation. It is therefore better that the gangrenous portion of the intestine should be brought well out of the incision, leaving full liberal margins at both ends. The intestine should be resected and its ends sewed into the wound, which is walled off with gauze. With both ends of the intestine thus opened, distention may be relieved and signs of further extension of the gangrenous process watched. At a later day, if the patient survives, the fistula may be closed and an anastomosis done.

President's Address; Some Comments on Present Day Tendencies in Gynecologic and Obstetric Practice

DR. CHARLES L. BONIFIELD, Cincinnati: One method of diagnosis strongly recommended by some operators in recent years seems to me to be seldom needed. I refer to the opening of the uterus. The greater one's familiarity with intra-abdominal conditions the less frequently he finds it necessary to do an exploratory abdominal section. Hysterotomy will find more frequent employment in the hands of the general surgeon who has broadened his field to include gynecology than in the hands of a gynecologist who has studied at the feet of a master of the art. It is from the laboratory rather than from the operating room that further success in dealing with cancer is to be expected. The importance of early diagnosis and operation is thoroughly recognized by the surgeon, if not by the laity, and the radical and painstaking operations now performed have merely reached the limit as to thoroughness. Further experience with radium has pretty well demonstrated the position it should occupy in cancer therapy. The surgical treatment of uterine fibroids in the hands of an operator skilled in pelvic surgery is now so successful and satisfactory that any other form of treatment will have to show brilliant results to supplant it. As to the administration of anesthetics, I prefer my anesthetics to be given by some one whose knowledge of anatomy, physiology and therapeutics enables him to meet emergencies that may arise without much direction or supervision on my part. The professional anesthetist is a useful member of the profession, but naturally likes to magnify his calling, so he provides himself with expensive and complicated apparatus that makes the operating room look like the inside of a submarine. I do not claim that nitrous oxid is not a useful agent, and that there are cases in which it is preferable to either ether or chloroform, but I do claim that it has not been proved that gas is safer than ether as the routine anesthetic for major surgical operations.

Luteum Extract in the Treatment of Menstrual Disorders

DR. ADAM P. LEIGHTON, JR., Portland, Me.: There are cases of dysmenorrhea in which the main causal factor is deficient action of the natural corpus luteum. I am not carried away with the idea that the therapy of corpus luteum is a cure-all in any sense of the word. On the other hand, the cases which may be traced to ovarian deficiency are probably in the distinct minority. One must not allow himself to be so impressed with the etiologic value of some one factor in the cause of disease that he forgets or becomes indifferent to others of equal importance. Surgery is necessarily indicated in those cases in which we find pelvic pathologic conditions or anatomic abnormalities present, which we are wont to consider as probable causes of this disorder. There are some serious drawbacks to the use of corpus luteum. It generally must be used routinely or continuously to obtain and maintain results. Its action is not immediate, it is cumulative, and for that reason patients and we ourselves too often discard its use after a short trial, if it has been unproductive of good results. From 15 to 30 grains a day, seldom more, is sufficient in any case. Its prolonged administration has not brought about any untoward symptoms, with the possible exception of slight gastric disturbance in one or two instances. The subject of organotherapy, in its present experimental state, is rather involved and indefinite, and while it is sometimes difficult to recognize and identify cases which would be benefited by corpus luteum, yet when there is a possibility of ovarian deficiency being an etiologic factor in any gynecologic disorder, we owe it to the patient to make use of this remedial agency, for its value is well determined.

Present Status of Twilight Sleep in Obsterics

DR. A. J. RONGY, New York: Judging from my experience extending over a period of fifteen months, and covering a series of over 350 cases, I feel that the value of the treatment and its acceptance, as a recognized therapeutic measure, will depend on our interpretation of the physiologic processes which are produced by these drugs. If we accept the theory that the semiconsciousness induced prevents the actual experience of pain, although apparently present in all its clinical phases, then labor must be considered painless, and therefore to refuse to adopt it would be a failure on our part to carry out the trust reposed within us. On the other hand, if the mental state induced does not actually prevent the sensation of pain and the patient is actually suffering, even though it be modified, then the value of this method will devolve on the degree of pain, diminution or analgesia, and not on the lack of recollection of pain or amnesia. I find it difficult to reconcile the fact that a patient, displaying all clinical evidences of pain, such as crying and groaning, as is observed in these patients, does not actually experience it. However, I am fully convinced that pain, in a goodly proportion of cases, is influenced to a degree that would warrant its adoption in selected cases, more particularly in the primiparas of the highly emotional type and in multiparas in whom we anticipate long and tedious labors.

The Teaching of Obstetrics

DR. CHARLES EDWARD ZIEGLER, Pittsburgh: I would not overemphasize the importance of didactic teaching in obstetrics. It is basic and indispensable. It must in part precede and in part accompany clinical teaching, but can never take its place, as has too long been attempted. In times past obstetrics was taught very largely didactically and in certain quarters this is still the case. Even at present in all but a few medical schools in this country, the clinical teaching and practical experience given undergraduate students in obstetrics are wofully deficient. Both the teaching and practice of obstetrics are generally regarded as the poorest of all the clinical branches of medicine. There must be a reason for this. The lay public will continue to regard with indifference all pleas for the improvement in the teaching of the practice of obstetrics so long as more than 50 per cent. of confinements are in the hands of ignorant, nonmedical persons, who, as a class, are regarded as capable of doing the work satisfactorily, even by physicians, among whom are certain well-known professors of obstetrics. The teaching of the clinical or practical side of obstetrics can be accomplished satisfactorily only through the medium of suitably equipped and properly conducted hospitals and dispensaries. Such hospitals and dispensaries should be teaching and research institutions in the fullest and broadest sense of the terms, with a large amount of obstetric material freely and constantly available for the purpose. The teaching staff, and there should be no other, should consist of full-time workers only, who should be paid salaries sufficiently large to make them independent of all other work. To

become a thoroughly trained obstetrician, the graduate student must spend a number of years as assistant and teacher in maternity hospital and dispensary services of the type described. The major part of undergraduate instruction should be given by graduate students for this very purpose. The teaching helps them immeasurably. It gives them assurance, makes them alert, teaches them the invaluable art of expression, and develops clean-cut ideals and thoroughgoing, accurate procedure. Laboratory studies and research should constitute an indispensable part of all graduate study in obstetrics, not alone for the knowledge which the student acquires and for what he adds to the knowledge of the subject, but most especially because of the habit of investigation acquired thereby, which will make him fruitful in research later and prevent him the more certainly from degenerating into a mere money maker.

The Combined Operation for the Interruption of Pregnancy and Sterilization

DR. PALMER FINDLEY, Omaha: The combination of abdominal hysterectomy and resection of the fallopian tubes is the procedure of choice in all cases not previously infected. The removal of the ovum through an abdominal incision should be reserved for those cases in which permanent sterilization is desired. No other method is so free from the dangers of sepsis, retained secundines, perforation of the uterus and excessive loss of blood. In point of safety, expediency and efficiency, the procedure will appeal to all abdominal surgeons.

Surgical Operations During the Pregnant State

DR. FRANCIS REDER, St. Louis: A woman expecting to become pregnant should be thoroughly examined for any physical defect that might be found. Such a defect should be corrected, if possible, before pregnancy takes place. No operation that can be deferred should be performed on a pregnant woman. Any operation that will contribute to the safety of a pregnant woman should be performed without hesitancy.

Menstrual Statistics Based on a Study of 4,500 Menstrual Histories

DR. K. I. SANES, Pittsburgh: Seventy-five per cent. of women menstruated regularly and 25 per cent. irregularly. The most common regular type met with was that of twenty-eight days, which constituted 72 per cent. of this type. The thirty-day type followed next in frequency with only 3.8 per cent. and the twenty-one-day with 3.3 per cent., etc. In some of the thirty-one-day type the menstrual flow appeared monthly on the same date independent of the number of days in the month. The most common irregular types were from three to four weeks, then from four to five weeks, two to three weeks, five to six weeks, etc. The most common ages of onset in order of their frequency were 15, 12, 16. The age of onset did not show any relation to regularity or irregularity of menstruation. The earliest age of onset in our series was 9 years and the latest 24 years. The most common duration of menstrual flow was three days, then four or five days, three or four days, five days, seven days and four days. The irregular type of menstruation showed a larger percentage of long durations and smaller percentage of shorter durations than the regular type. The quantity of flow in 45 per cent. of women was normal, in 17 per cent. scant and in 37 per cent. profuse. Irregular patients showed a higher percentage of profuse flow than the regular ones. Hyperthyroidism cases showed a high percentage of profuse menstrual flow (65 per cent.). Clots were very frequently found in menstrual flow and we did not find them to be influenced by menstrual irregularity. Forty-seven and four-tenths per cent. of women suffered from dysmenorrhea (if the term dysmenorrhea is to convey the idea of discomfort). In retrodisplacements the percentage was found to be 50.4 per cent. In 50 per cent. of the dysmenorrhea cases the symptoms appeared during the flow, in 29 per cent. before, in 17 per cent. before and after, and in the rest after the flow or during and after. Most frequently the dysmenorrhea appeared the day before the flow, then the first day of the flow, then two days during, two days before, one day before and two days during, then three days before, and seven days before. Improvement in menstruation was frequently noticed with advance of menstrual life, after marriage and after childbirths, menstrual periods becoming more regular and the dysmenorrhea improving or disappearing entirely. The most common ages of menopause in order of their frequency were given as 50, 46, 48, 47, 51, 49, 44, 45, 52. The length of menstrual life was most commonly given as thirty-seven years, then thirty-five and thirty-three. Sixty-eight per cent. reported a menstrual life of thirty years or more. The very early and very late ages of puberty showed a rather early menopause.

Spinal Anesthesia in Gynecologic Operations

DR. R. R. HUGGINS, Pittsburgh: After an experience with spinal anesthesia covering a period of two years I am convinced that it is of great value and that it will eventually find a high place among the methods of anesthesia, particularly for surgical procedures in the lower abdomen and pelvic cavity. The time is not here, however, when it can be used indiscriminately and by those who are not familiar with the contraindications. It is highly important to know when not to use it. A keen appreciation of its dangers and the unfortunate sequelae which have thus far caused considerable prejudice against the method will enable us to avoid its use in certain instances in which they are liable to occur.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

September, V, No. 9, pp. 811-964

1 Degeneration of Life. W. J. V. Deacon.
2 Study of Methods of Sewage Disposal in Industrial and Rural Communities and Suggestions for Their Improvement. J. F. Siler, U. S. Army, P. E. Garrison, U. S. Navy, and W. J. MacNeal, New York.
3 Fate of Bacteria in Frozen Meat Held in Cold Storage and Its Bearing on Bacteriologic Standard for Condemnation. J. Weinzirl and E. B. Newton, Seattle.
4 Experiences with Refuse Collection and Disposal with Reference to Odors. S. A. Greeley, Chicago.
5 Wound and Skin Diphtheria as Public Health Problem. L. D. Bristol, University, N. D.
6 Proposed American Public Health Association Course of Study for Health Officials and Others Interested in Public Health Work. F. D. Bell, New York.
7 Accidents Following Vaccination. W. F. Elgin, Glenolden, Pa.
8 Protection and Maintenance of Public Health During and Subsequent to Great Conflagration. W. C. Hanson, Boston.
9 Bacteriologic Method for Determining Manural Pollution of Milk. J. Weinzirl and M. V. Veldee, Washington, D. C.
10 Uhlenhuth's Method for Sputum Examination, for Tubercle Bacilli. J. J. Kinyoun, Washington, D. C.
11 Bureaus of Water Supplies. E. Bartow, Urbana, Ill.
12 Danger to Laundry Workers of Infection from Handling Soiled Linen. E. A. Dederer.
13 Municipal Health Officers and Venereal Disease. W. A. Evans, Chicago.
14 Portable Air Sampling Apparatus for Collection of Large Volumes. E. W. Brown, U. S. Navy.
15 Refuse Disposal in Southern Cities with Particular Reference to Savannah, Ga., and Its New Incinerator. E. R. Conant, Savannah, Ga.
16 Report of Committee on Water Supplies of Sanitary Engineering Section. F. F. Longley.

Archives of Internal Medicine, Chicago

September, XVI, No. 3, pp. 341-508

17 *Transient Auriculoventricular Dissociation with Varying Ventricular Complexes Caused by Digitalis. H. A. Christian, Boston.
18 *Inactivation of Pepsin by Sodium Chlorid; Its Clinical Significance. W. W. Hamburger, Chicago.
19 *Endemic Typhus in Philippine Islands. G. B. Foster, Jr., Washington, D. C.
20 *Study of Infantile Tetany; Report of Case. A. Fletcher, Toronto.
21 *Simple Method (Indicator-Phenolsulphonephthalein) for Determining Variations in Hydrogen-Ion Concentration of Blood. R. L. Levy, L. G. Rowntree and W. M. Marriott, Baltimore.
22 Roentgenologic Determination of Gastric Motility. R. D. Carman and A. Miller, Rochester, Minn.
23 *Urobilin in Stool in Pernicious Anemia as Influenced by Splenectomy, Transfusion and Salvarsan. O. H. Robertson, Boston.

24 *Metabolism Studies Before and After Splenectomy in Congenital Hemolytic Icterus. S. Goldschmidt and O. H. P. Pepper, and R. M. Pearce, Philadelphia.
25 *Effect of Hemorrhage and of Occlusion of Carotid Arteries on Vasomotor Irritability. R. G. Hoskins, W. N. Rowley and C. Rosner, Chicago.
26 *Studies in Diphtheroids. H. Fox, Philadelphia.
27 *Diminished Power of Nephritic Kidney for Eliminating Uric Acid as Exemplified by Use of Atophan. M. S. Fine and A. F. Chace, New York.
28 Chronic Meningococcus Septicemia Associated with Pulmonary Tuberculosis. H. A. Bray, Ray Brook, N. Y.
29 *Treatment of Cystinuria; Report of Case. W. G. Smillie, Boston.

17. **Auriculoventricular Dissociation.**—As an occasional result of digitalis administration, there develops, says Christian, a cardiac disturbance consisting of variations in the form of succeeding ventricular complexes. Of the cases, one reported by Cohn, one by Oppenheimer and Williams and four by Christian, all except possibly one of the author's cases showed auriculoventricular dissociation. In one case the curve obtained did not justify any statement as to auricular activity; there may have been a regular rate in the auricles with auriculoventricular dissociation. All cases were of the type of chronic myocarditis without any marked signs of valve lesions.

18. **Inactivation of Pepsin by Sodium Chlorid.**—Hamburger summarizes his paper as follows: Sodium chlorid will prevent pepsin in aqueous solution from digesting protein. The inhibition of pepsin by sodium chlorid, together with the ability of animal serum to deviate pepsin (described in an earlier paper), is responsible for most, if not all, of the published accounts of antipepsin. The inhibition of pepsin by sodium chlorid is permanent, the inactivated ferment failing of reactivation by the subsequent addition of hydrochloric acid. The inactivation may be prevented, however, by dissolving the ferment in dilute hydrochloric acid. Neutralization of pepsin dissolved in hydrochloric acid alone (without the addition of sodium chlorid) inhibits the ferment by the sodium chlorid formed from union of alkali and acid, acting in a neutral solution. Complete neutralization of the gastric juice causes similar pepsin inactivation. The inactivation of pepsin by complete and continuous neutralization of gastric juice is indicated in the treatment of various diseases of the stomach in which temporary inhibition of peptic digestion is desired. This is particularly true in the prevention and cure of chronic gastric ulcer. By the use of certain foods, methods and time of feeding, and various alkaline substances, complete and continuous neutralization can be obtained.

19. **Endemic Typhus.**—Foster's observations are based on a study of twenty-three cases occurring among Filipinos. The first case was erroneously diagnosed as malaria. Tentative clinical diagnoses of typhus were made by elimination; but, in the absence of confirmatory laboratory evidence, the first positive diagnosis was not made until Oct. 12, 1914. The disease observed here corresponds to the acute infectious disease described by Brill, but the period of incubation appeared longer, the average leukocyte count was less and marked nervous manifestations—absent in Brill's cases—were not uncommon in Foster's cases. The onset was characterized by chill in twenty-one cases, headache in nineteen and by vomiting in six. Lumbar pain and pains in the extremities occurred in eight cases and vertigo was recorded once. In two of the cases the onset was gradual and fever was the first symptom noted. There was intense pain in the chest in one case at the onset, probably due to pulmonary congestion. The facies at the onset was that of intense congestion. The expression in some cases was anxious and in others dull and stupid. The color remained good until the crisis, after which pallor was evident for a variable time and the patient exhibited a "washed out" appearance.

The temperature rose rapidly during the stage of invasion, reaching the fastigium on the second to the sixth day. The average fastigium in twenty-one cases was 103.5 F., the lowest 102 F. and the highest 104.6 F. The fastigium was reached on the third or fourth day in 50 per cent. of the cases. The eruption occurred in sixteen cases, was absent in two cases and in the remaining five cases was either absent or overlooked. It appeared on the fifth day in two thirds of the cases but in isolated cases it was observed as early as the fourth day and as late as the eighth day. It appeared first on the abdomen and chest and developing rapidly and not in crops, had extended to the back, shoulders, arms, hands, legs and feet and in two cases to the face, within twenty-four hours. The lesions were discrete, slightly raised, rose red to dark red, irregular in outline and measured from 2 to 8 mm. in diameter. In the average case the spots were much more profuse than the rose spots of typhoid and less numerous than the lesions in the average case of measles. The eruption faded rapidly with the crisis and had disappeared by the tenth day. Desquamation did not occur.

The blood showed certain constant changes. The leukocyte count, in sixteen cases, varied from 4,000 to 18,000, the average count being 7,865. Differential leukocyte counts showed a rather consistent increase in the percentage of large mononuclear cells, with a corresponding decrease in the number of polymorphonuclears. Eosinophils were not present in appreciable numbers during the febrile period. Blood cultures in fifteen cases gave negative results. The pulse exhibited no characteristic features. The heart showed no variations from the normal except in one case. A soft blowing systolic murmur was audible in this case following the crisis. Anorexia developed early and persisted throughout the febrile period. Epistaxis, so constant a feature in typhoid, occurred but twice. Signs referable to the nervous system were common, and it appeared to stand the brunt of the infection. Retention of urine occurred rather persistently in one case, necessitating frequent catheterization. Polyuria was an almost invariable concomitant of the crisis. A relapse, intercurrent in character, occurred in one case. One death, due to acute ulcerative endocarditis following the crisis, occurred in the series of twenty-three cases, establishing a death rate of 4.34 per cent.

20. **Infantile Tetany.**—Fletcher holds that clinical observation would not warrant the conclusion that calcium changes alone account for the nerve irritability in tetany, but would seem to support the hypothesis that the tetany results from a disturbance of the concentration equilibrium of the salts. Such salt changes are probably associated with gastro-intestinal disturbances and decreased activity of the kidney, and, as improvement in the function of these two systems occurs, restoration of the normal salt equilibrium ensues. Treatment, accordingly, from these indications should aim at restoring a normal digestion and increasing the activity of the kidney.

21. **Hydrogen-Ion Concentration of Blood.**—The indicator method of determining H-ion concentration is made applicable to blood and serum by the authors by utilization of dialysis through a collodion membrane, which excludes the disturbing influences of color and of proteins. The method is simple, accurate, rapid and well adapted for clinical use. The technic consists of dialyzing 3 c.c. of blood or serum at room temperature against 3 c.c. of 0.8 per cent. salt solution for five minutes, adding an indicator and comparing with colored standard phosphate mixtures of known H-ion concentration. Phenolsulphonephthalein is employed as the indicator in this method. It is found to exhibit easily distinguishable variations in quality of color, with minute differences in H-ion concentration between the limits pH6.4 and pH8.4. Oxalated blood from normal individuals gives a dialysate with a pH varying from 7.4 to 7.6, while that of serum ranges from 7.6 to 7.8. Variations from these figures toward the acid side were encountered only in conditions which clinically, and from the standpoint of the laboratory findings, evidenced an acidosis. In a small series of clinical acidoses, the serums varied from 7.55 to 7.2 and the oxalated blood from 7.3 to 7.1. In experimental acidosis in dogs, a pH of 6.9 has been encountered in both serum and blood just before death.

23. **Urobilin in Stool in Pernicious Anemia.**—In six cases of pernicious anemia with splenectomy, examined by Robertson, the urobilin output which had previously been high, showed a marked decrease immediately after operation. In two cases in which the urobilin later returned to a high

figure, as well as one case in which there was a persistently increased output, showed definitely less improvement than the two cases in which the urobilin remained normal. Three of the four patients transfused gave evidence of a resulting bone marrow stimulation and at the same time showed a temporary increase in urobilin excretion. The one case in which transfusion was without effect showed no such increase. In three patients treated with salvarsan, there was practically no effect, either on the course of the disease or on the urobilin excretion. It seems fair to Robertson to conclude that: 1. Variations in the urobilin output may be taken as an index of corresponding changes in the course of the disease. 2. Such variations in the urobilin may occur before there is any change in the number of red cells. 3. The determination of the urobilin output as an index of blood destruction is the most accurate means we have of estimating the effect of treatment.

24. **Splenectomy in Congenital Hemolytic Icterus.**—In a child with congenital hemolytic icterus splenectomy was followed by a disappearance of the discoloration of the skin, a rapid improvement in the condition of the blood and a striking improvement in general health. Metabolism studies before and after splenectomy gave the following results: A slight positive nitrogen balance before splenectomy was followed by an increased retention eight days after operation. The output of uric acid showed a decrease of 47 per cent. after operation. In the period directly after operation a change in the partition of creatinin and creatin elimination occurred; the total creatinin, however, showing but slight change. Other urinary nitrogen constituents showed no variations from the normal, and no change was found in the hydrogen ion concentration. The utilization of nitrogen was good at all times. Fat metabolism was normal. There was a large loss of iron through the feces before splenectomy followed by a decided decrease (40 per cent.) after operation. The excretion of urobilinogen and urobilin in the feces was markedly diminished after splenectomy; the amount after operation was about one-ninth of that excreted before splenectomy.

25. **Hemorrhage and Occlusion of Carotid Arteries.**—The authors found that hemorrhage caused a marked augmentation of the reaction to nicotin but slight or no augmentation of the reaction to epinephrin. Occluding the carotids in most instances leads to similar results. The authors suggest that the augmented reactions are probably due to increased irritability of the vasoconstrictor center and that the phenomenon is probably an adaptive arrangement tending to preserve normal circulatory conditions.

26. **Diphtheroids.**—Examination of the charted characters, the morphology notes and the pictures in thirteen cases, leads Fox to state that no one bacterial variety with definite morphologic and cultural characters has been isolated from eleven cases diagnosed as Hodgkin's disease (Rosenow 5, Kolmer 2, Fox 4) to which may be added a case of endothelioma of the lymph nodes. Diphtheroid bacilli have been isolated from glands in at least two cases having no clinical or anatomic resemblance to Hodgkin's disease and from a case of mediastinal tumor. The author points out that diphtheroid rods may be isolated in cases of Hodgkin's disease and other adenopathies, but there is no uniformity in biology, and morphology among the strains isolated by three observers in clinical and pathologic Hodgkin's disease. Diphtheroid rods, similar in biology and morphology to those found in Hodgkin's disease, may be found in enlarged glands in cases of chronic atrophic arthritis and other conditions. Diphtheroids have been found in glands the seat of a neoplasm, and in the enlarged glands near a neoplasm. There is great similarity in all respects between the gland diphtheroids and those found in normal and pathologic seats in the body, the so-called pseudodiphtheria bacilli. In one case, in which autogenous vaccination was given a fair trial, the patient has died. Another patient, already improving under the Roentgen ray, continued to improve with autogenous vaccination and no Roentgen ray. In arthritis cases the patients receiving vaccine consisting wholly or in part of diphtheroids, showed some improvement. Much granules have not been found in sections of lymph granulomas of the Hodgkin's type.

27. **Use of Atophan for Eliminating Uric Acid.**—In six cases examined by Fine and Chace there was a general relationship between the degree of response to the administration of atophan on the one hand, and the extent of non-protein nitrogenous retention and the clinical pictures on the other. Their observations lend some support to the view that abnormal renal cells would be expected to prove less responsive to the action of atophan than are healthy cells.

29. **Treatment of Cystinuria.**—According to Smillie cystinuria is best treated by a low protein diet, with the addition of sufficient alkali to keep the urine alkaline. Cystin crystals will practically disappear from the urine of a cystinuric when sufficient sodium bicarbonate is added to the diet to render the urine alkaline. The amount of sodium bicarbonate necessary to render the urine alkaline, when the patient is on a nitrogen intake of 10 gm., or more, is greater than can be well borne by the stomach. Sodium bicarbonate does not influence body metabolism in cystinuria but simply renders the cystin soluble.

Archives of Pediatrics, New York

August, XXXII, No. 8, pp. 561-640

30 *Etiologic Relationship of Syphilis to Chorea of Sydenham. H. Koplik, New York.
31 Clinical Distinctions Between Cerebral Intoxication, Meningism (Serous Meningitis), and Meningitis. H. Heiman, New York.
32 *Meningitis in Newborn; Report of Case. C. Herrman, New York.
33 Congenital Depressions of Skull. A. L. Goodman, New York.
34 *Some Experiences with Friedenthal Milk. E. A. Riesenfeld, New York.

30. **Relationship of Syphilis to Chorea of Sydenham.**—Koplik took eleven successive cases of chorea in which the age range was from 6 to 13 years. In five of these cases there was an endocarditis on admission to the hospital, with an evident lesion of the valves, in three cases a distinct history of rheumatism or rheumatic pains, in ten cases a Wassermann reaction was made, and in eight the result was satisfactorily negative. In two, the reaction for one reason or another, failed but was not positive. In all the cases there was absolutely no stigmata of syphilis, hereditary or otherwise, nor could syphilis be traced in any way in the family history. Nine patients were injected with neosalvarsan in doses ranging from 0.15 gm. to 0.4 gm. of the drug. Of seven patients thus injected, once or repeatedly, the effect, in that the symptoms immediately subside, was not observed. Even after second and third injections the chorea continued to run its accustomed course. The average duration of the disease, after the last injection of the drug, was thirty-six days in seven cases. In another case a nephritis resulted and the patient was ill with chorea for some weeks after, though finally a recovery took place. Koplik concludes that there is nothing in these results to warrant any assumption of a possible syphilitic or parasyphilitic influence as a causative factor in chorea of Sydenham. He does not regard salvarsan as an agent of any value above what has hitherto been in vogue in the treatment of chorea minor, nor does he feel warranted in tracing any relationship between chorea of Sydenham and hereditary or acquired syphilis.

32. **Meningitis in Newborn.**—The case cited by Herrman, he says, is the only case of pneumococcus meningitis in the newborn reported. The case was especially interesting on account of the absence of fever and later a marked subnormal temperature, and on account of the entire absence of meningeal symptoms, so that the necessity for a lumbar puncture was not even thought of.

34. **Experiences with Friedenthal Milk.**—Of twenty-one infants placed on Friedenthal's milk by Riesenfeld, nineteen made a steady and normal gain in weight, with an average of 4 ounces per week, infants under 3 months of age making the greater progress. Two infants who failed to gain showed a marked intolerance for the high fat and sugar content of Friedenthal's milk and could only be given food containing low quantities of sugar and fat.

Boston Medical and Surgical Journal

September 16, CLXXIII, No. 12, pp. 413-450

35 Surgical Experiences in France. W. J. Mixter, Boston.
36 *Common Shoulder Injuries. E. H. Risley, Boston.
37 Technic of Transfusion by Means of Glass Tubes. A. R. Kimpton and J. H. Brown, Boston.
38 *Use of Schick Test in Children's Institution. H. Linenthal and S. H. Rubin, Boston.
39 Case of Anterior Poliomyelitis with Multiple Paralyses, Including Hitherto Unrecorded Involvement of Left Diaphragm. P. H. Sylvester, Newton.
40 *Auricular Fibrillation and Complete Heart Block. P. D. White, Boston.
41 Suction and Irrigation Apparatus for Diagnosis and Treatment of Antrum of Highmore. J. Prenn, Boston.
42 *New Method of Treating Flat-Foot. P. B. Howard, Newtonville,

36. **Common Shoulder Injuries.**—Emphasis is laid by Risley on the following points: Diagnosis in shoulder injuries is not made by clear cut signs and symptoms, but only in a careful process of exclusion and roentgenoscopy in every case. The Roentgen ray is of the utmost importance in every case as it often reveals the underlying cause of a persistent bursitis to be some of the frequent lesions of the greater tuberosity or acromion, which are often overlooked unless especial search is made for them. About 60 per cent. of subacromial bursitis cases are of the occupational type. The remaining 40 per cent. have as an underlying cause in the great majority of cases, some lesion of the greater tuberosity or acromion. The diagnosis of ruptured supraspinatus tendon should not be made until at least three months of nonimprovement have elapsed.

Cases of long standing bursitis with adhesions give a picture identical with that of ruptured supraspinatus tendon and give extremely satisfactory results from operation. Calcareous deposits in the subacromial bursa may be spontaneously absorbed. The term "insertion fracture" should be substituted for the nondescriptive term of "sprain fracture." Occupational neurosis per se does not exist in the shoulder joint. Injuries to the brachial plexus are rare. The percentage of patients benefited will be greatly increased by early exploratory operation. Slight injuries to the greater tuberosity and acromion process and arthritis of the acromioclavicular joint are of far greater importance than is generally supposed in prolonging disability after shoulder injuries. Risley lays especial emphasis on the importance of these seemingly trivial injuries to the shoulder joint as factors to be considered in diagnosis, prognosis and treatment.

38. **Schick Test in Children.**—Of 126 children, ranging in age from 5 to 16 years, Linenthal and Rubin found thirty-six susceptible to diphtheria and ninety immune. Antitoxin of 750 units administered to the nonimmune produced an immunity which did not last over four weeks in 50 per cent. in several as long as eight weeks, and in six children the immunity conferred by the antitoxin persisted after five months. With the exception of the six children with the persistent antitoxin immunity and one child who gave negative reaction the first time and a positive the second time, the results of two tests, five months apart, were uniform. The authors regard the test as of great value in determining susceptibility to the disease and thus serves as a guide to determine in the event of exposure to diphtheria, who should and who should not receive prophylactic doses of antitoxin. Persons naturally immune will thus be saved the annoyance and the possible disagreeable results apt to follow the injection of horse serum.

40. **Auricular Fibrillation and Complete Heart Block.**—White cites the case of a patient showing heart block and auricular fibrillation whose heart rate rose from 27 with complete block, to 47 with partial block during the administration of digitalis and coincident with marked clinical improvement. The ventricular complexes of the electrocardiogram changed in character simultaneously with the decrease in the degree of block, the change in the R suggesting a more normal conduction in the ventricle. The spontaneous return to a complete block was accompanied by a continuation of the patient's good health. The block was not vagal in origin, atropin having no influence on it.

42. **Method of Treating Flat-Foot.**—After having trouble with his own right foot, Howard decided to try an experiment which would give support to the arch in all positions and free play to the muscles, at the same time being perfectly flexible and self-adjusting. Taking a cast of his foot he made a model and had a rubber factory make up several arch supports or shaped rubber bulbs filled with air. These he covered with leather and tried them out in his shoe with much satisfaction. In general the arch above conforms to the arch of the foot below, it fits the shoe, and on the inner side it is reinforced to prevent bulging. This is encased in leather, which is extended under the heel for an anchor, so to speak, and forward it tapers off just a little in front of the arch support. The support is made and encased in such a way that the air is held absolutely under the arch of the foot, and as the contour of the arch of the foot changes, the arch support changes also, still exerting on the arch of the foot the same upward pressure. It allows free muscular action all of the time as the foot is flexed or extended in locomotion.

Canadian Medical Association Journal, Toronto

August, V, No. 8, pp. 661-756

43 Pharmacology of Animal Extracts. V. E. Henderson, Toronto.
44 Organotherapy in Obstetric and Gynecologic Practice. B. P. Watson, Toronto.
45 Animal Extracts in Surgery. G. E. Wilson, Toronto.
46 Animal Extracts in Rhinology and Laryngology. D. J. G. Wishart, Toronto.
47 Animal Extracts in Ophthalmology. N. Jones, Toronto.
48 Syphilis of Heart and Aorta. A. McPhedran, Toronto.
49 Experimental Gastro-Enterostomy. F. A. C. Scrimger, E. Archibald and A. H. Pirie, Montreal.
50 Résumé of Evening Clinic for Diagnosis of Diseases of Chest at Boston City Hospital. S. W. Ellsworth, Quincy, Mass.
51 Series of Unusual Surgical Conditions. A. T. Bazin, Montreal.

Georgia Medical Association Journal, Augusta

August, V, No. 4, pp. 81-103

52 Need of Better Rural Sanitation. L. C. Allen, Hoschton.
53 Influence of School Life on Physical Child. T. Teepel, Atlanta.
54 Psychosis of Morphin and Alcohol; Was Medical Profession Prepared for Harrison Law? C. King, Atlanta.
55 Infected Tonsils. R. T. Dorsey, Atlanta.
56 My Experience with Pituitary Extract. H. Rawlszer, Omaha.
57 Treatment of Typhoid. F. Bird, Valdosta.

Illinois Medical Journal, Chicago

August, XXVIII, No. 2, pp. 81-160

58 Organization; Medical Defense; Contract Practice. A. L. Brittin, Athens.
59 Making of Milk Commission. J. W. VanDerslice, Oak Park.
60 Medical Inspection of Employees on Certified Farms. G. H. Campbell, Chicago.
61 Physician's Opportunity to Conserve Health of People. J. A. Robison, Chicago.
62 Cooperation in Public Health Work by Neighboring Small Cities. G. F. Ruediger, La Salle.
63 Present Practice Relating to City Wastes Collection and Disposal. P. Hansen, Urbana.
64 Some Reflections. E. W. Weis, Ottawa.
65 Operative Treatment of Pelvic Hernia. H. T. Byford, Chicago.
66 Comparative Roentgen Ray Work. E. M. Sala, Rock Island.
67 Keeping Child Normal. W. O. Krohn, Chicago.
68 Some Pressing Health Needs in Illinois. C. St.C. Drake, Springfield.
69 Some Infections of Head and Their Causes. J. S. Clark, Freeport.
70 Blood Pressure in General Practice. N. T. Stevens, Clifton.

Iowa State Medical Society Journal, Des Moines

August, V, No. 8, pp. 311-350

71 Morrow of Surgery. T. E. Powers, Clarinda.
72 Life Insurance and Physician. G. E. Crawford, Cedar Rapids.
73 Organization of National and Local Forces in Campaign Against Cancer. C. E. Lakeman; New York.
74 Tumors of Urinary Bladder. J. S. Eisenstaedt, Chicago.
75 Circumcision of Tonsil. F. G. Murphy, Mason City.

Journal of Infectious Diseases, Chicago

September, XVII, No. 2, pp. 277-436

76 *Environmental Studies of Streptococci with Special Reference to Fermentative Reactions. J. Broadhurst, Ithaca, N. Y.
77 Bacteriologic Study of Secondary Invaders in Hog-Cholera. F. Eberson, Ames, Ia.
78 Separation of Antibody Fractions in Hog-Cholera Serum. F. Eberson, Ames, Ia.

79 *Toxins and Side-Chain Theory. A. F. Coca, New York.
80 *Rapid and Efficient Method of Producing Hemolytic Amboceptor Against Sheep Corpuscles. A. F. Coca, New York.
81 *Thyroid of Guinea-Pig in Experimental Diphtheric Intoxication. L. A. Emge, Chicago.
82 *Leprosy—Presence of Acid-Fast Bacilli in Circulating Blood and Excretions. J. A. Honeij, Penikee Island, Mass.
83 *Serologic Diagnosis of Leprosy. S. Nakajo and T. Asakura, Japan.
84 *Observations on Serologic Diagnosis of Leprosy. S. Nakajo and T. Asakura, Japan.
85 *Iritis and Other Ocular Lesions on Intravenous Injection of Streptococci. E. C. Rosenow, Chicago.
86 *Effect on Antibody Production of Removal of Various Organs. L. Hektoen and A. R. Curtis, Chicago.
87 *Influence of Roentgen Ray on Production of Antibodies. L. Hektoen, Chicago.
88 Absence of Demonstrable Specific Antibodies in Rabies Caused by Fixed Virus. W. H. Burmeister, Chicago.
89 *Fate of Foreign Erythrocytes Introduced into Blood Stream of Rabbit. W. E. Cary, Chicago.

76. Environmental Studies of Streptococci.—Broadhurst's paper gives a condensed account of the results obtained in a study of 767 strains of streptococci of which all but twenty-three were freshly isolated for this purpose.

79. Toxins and Side-Chain Theory.—This discussion concerns itself only with the venom constituent that attacks the naturally invulnerable corpuscles with the aid of lecithin. The two important results that have come out of Coca's investigations of the hemotoxin of cobra venom are: First, the demonstration of the fermentative nature of a toxin, and second, the demonstrated failure of the side-chain theory in the first real test to which it has been put as an explanation of the mechanism of toxin action. In view of the first of these results Coca thinks it safe to assume that all toxins may be ferments. The sources of the ferments and those of the toxins are the same. Ferments as well as toxins are known to exist in glandular secretions of animals and in the products of the growth of bacteria and in the higher forms of plant life.

Another result of the investigations of the hemotoxin of cobra venom is the explanation of the natural resistance of the invulnerable corpuscles (ox and sheep) to the direct action of the hemotoxin. This natural resistance, or immunity, has been found to depend on a physical condition of the cell substance that prevents the hemotoxin from penetrating to the lipoids of the corpuscles. As the discovery of the nature and manner of action of the hemotoxin of cobra venom has revealed the probable nature of the other toxins so also the explanation of the natural immunity of the invulnerable corpuscles to the direct action of the venom hemotoxin, Coca says, may provide a clue to the mechanism of some of the other known instances of natural immunity to toxins. It is evident that the explanation offered by Ehrlich for natural immunity cannot be brought into harmony with the demonstrated mechanism of the natural immunity of blood corpuscles to the direct action of the hemotoxin of cobra venom.

80. Rapid Method of Producing Antisheep Amboceptor.—The results of Coca's study may be applied as follows to the practical production in rabbits of a hemolytic serum against sheep corpuscles. Two intravenous injections of 1, or at most 2 c.c. each of washed sheep corpuscles should be given at an interval of not less than four days to three rabbits. At the end of five days after the second injection, at least one of the rabbits will almost always yield a strongly hemolytic serum the hemolytic potency of which will be stable. If it is desired not to kill the animals, almost as much blood usually can be obtained by bleeding from the ear vein on two successive days (say the sixth and seventh days after the second injection) as by bleeding to death. The potency of the serum obtained from the second bleeding is as high as that obtained from the first bleeding. The rabbits should not be used again for the production of amboceptor against sheep corpuscles. In a single experiment in immunization with ox corpuscles, Coca has obtained results that are comparable with those obtained with sheep corpuscles. Three normal rabbits received, at an interval of five days, two intravenous injections each of 1 c.c. of washed ox corpuscles. On the sixth day following the second injection, the hemolytic strength of the serum of the three rabbits was respectively 1:2500, 1:2500 and 1:320. After two months, during which the serum had been preserved in the ice-box with the addition of 0.25 per cent. of phenol, the hemolytic strength of the serum was found to be unchanged.

81. Guinea-Pig Thyroid in Diphtheric Intoxication.—Experimental diphtheric toxemia produced in guinea-pigs in such a way as to simulate the course of human diphtheric toxemia, Emge states, does not lead to changes in the thyroid gland to the same degree as has been observed in the human thyroid gland in fatal diphtheria. The changes observed in the thyroid of the guinea-pig are not sufficiently marked nor so uniformly parenchymatous as to permit the conclusion that this gland has a detoxicating action in experimental diphtheric toxemia.

82. Acid-Fast Bacillus of Leprosy.—Honeij's paper is the result of systematic search in an attempt to analyze the cases occurring at the Penikese Leper Colony and to determine whether the acid-fast bacillus can or cannot be found in the blood, urine, feces, sputum, nasal mucus, and other excretions and discharges, so as to eliminate possible errors in research along other lines now being carried out. Of 28 examinations of the blood of 16 patients, there were 9 positive, 3 questionable and 16 negative. This represents 8 patients with positive and 8 patients with negative results. Of 41 examinations of the urine of 16 patients, 16 were positive in 9 patients. Of 27 examinations of the feces of 16 patients, 10 were positive in 6 patients. Of 41 sputa of 16 patients, 32 were positive and 9 negative, 14 patients giving positive and 2 patients negative sputum. Examination of the nasal mucus of 16 patients with 41 examinations gave 34 positive, 6 negative and 1 questionable result. In other words, 14 patients had bacilli in the nasal mucus and 2 did not. Of 15 patients that had bullae, ulcers and pustules, those having bullae gave 5 results positive and 10 negative; ulcers, 13 positive and 2 negative; and pustules, 7 positive and 8 negative. The tears were negative in 26 examinations with 13 patients. The presence of bacilli in the blood and in the various excreta as determined, Honeij believes warrants the assumption that insect transmission of leprosy is a possibility.

83. Serologic Diagnosis of Leprosy.—This report concerns the complement-fixation tests made on the serum of forty-six lepers and eight nonleprous patients, the total number of tests being 155. The results in complement fixation tests with leprous serum and old tuberculin, considered from the standpoint of the type of the disease, show that a higher percentage positive, that is, 87.5 per cent. was obtained in tuberculous leprosy, than was obtained in nervous leprosy, 40 per cent. Classified according to the severity of the symptoms, these results are: 89.48 per cent. positive cases, severe; 55.56 per cent. mild; and 45.45 per cent. slight. From these facts, Nakajo and Asakura conclude that the reaction produced by old tuberculin bears a direct relation to the nature of leprosy.

84. Serologic Diagnosis of Leprosy.—In the first series reported on by Nakajo and Asakura, 69.23 per cent. of the total number of cases gave positive results with old tuberculin. In the second series 70 per cent. were positive, practically the same result. Adding these two figures, forty-nine cases were examined in all, of which thirty-four or 69.38 per cent. reacted positively. On the other hand, eleven cases of syphilis and four other cases of nonleprous diseases, that is, fifteen cases in all, gave negative results. The fact that old tuberculin reacts specifically with leprous serum in the complement fixation test, has thus again been demonstrated. Thirty-three cases of leprosy were examined by the Wassermann test, of which twenty-six, or 78.79 per cent. were positive. This shows that the Wassermann test brings about a greater percentage of positive results than does old tuberculin, for of the nine cases examined with both kinds of antigen, only seven produced positive results with the latter, while all of them were positive with the Wassermann test. If, therefore, the serum in a doubtful case (whether syphilis or leprosy) produces positive results both

with old tuberculin and the Wassermann antigen, the authors hold that the probabilities are that the patient is a leper. However, negative results with old tuberculin are not sufficient to exclude a diagnosis of leprosy. On this occasion they observed no case of leprosy that reacted positively only with old tuberculin.

85. **Ocular Lesions from Injection of Streptococci.**—As the outcome of a long series of experiments in which animals were injected intravenously under uniform conditions with streptococci from rheumatism, from appendicitis, from ulcer of the stomach, from cholecystitis, from erythema nodosum, from herpes zoster, from parotitis, from pyorrhea, from tonsils, and from dairy products, Rosenow has had opportunity to study the eye lesions in forty-eight animals. The lesions may be classified as follows: (1) unilateral panophthalmia in five instances (twice following injections of strains from rheumatism and herpes zoster as isolated, and once in each case after one animal passage, and once in a rabbit injected with a streptococcus mucosus from the eyeball in a case of metastatic panophthalmia following tonsillitis and otitis media); (2) hemorrhages in the limbus, with or without episcleritis, in fourteen instances (four times following injection of laboratory strains after they had attained a certain grade of virulence, three times with rheumatic strains, twice with strains from appendicitis, twice with strains from herpes zoster and once each with strains from erythema nodosum, myositis and from butter); (3) iritis or iridocyclitis nine times (four times after injection of certain laboratory strains, three times with rheumatic strains, and twice following injection of streptococci from small pus pockets in tonsils of otherwise normal individuals); (4) conjunctivitis, usually bilateral, occurring frequently, in ten instances associated with the streptococci injected (once each with streptococci from appendicitis, herpes zoster and rheumatism, once with streptococci from butter, once with streptococci from the pus pocket in the tonsil of a cow, twice after injection of a laboratory strain, and three times after injection of strains from pus pockets in tonsils from approximately 100 individuals); (5) ulcer of the cornea due to the organism injected, observed only once, after injection of a strain of streptococcus from the muscle in calcifying myositis in a man. Lesions similar to these occurred with or without herpes in twelve animals injected with the strains from herpes zoster. Herpes of the conjunctiva followed injections or streptococcus from the tonsil in ulcer of the stomach in a cow. Hemorrhages in the retina were not often looked for, but were found in two instances.

86. **Production of Antibodies after Removal of Organs.**—In the dog complete removal of the stomach, of the small intestine, or of the thyroid according to the observations made by Hektoen and Curtis does not interfere with the development of the agglutinin and opsonin for rat corpuscles after intravenous injection of rat blood. Pancreatectomy, complicated by intussusception and by rabies, resulted in a diminution in the amount of antibodies that accumulated in the blood. Simultaneous removal of spleen and of pancreas appears to have about the same depressing effect on antibody production in dogs as removal of the spleen only. Removal of the small intestine and ligation of the mesenteric artery before the injection of rat blood in dogs may be followed by a longer latent period after the injection of antigen than in normal dogs. Adrenalectomy at the height of the antibody curve in dogs does not change the antibody content of the blood serum. In rats, removal of about one-half of the liver appears to have no effect on the development of lysin for sheep corpuscles. The results recorded indicate that the mechanisms for the fabrication of antibodies are quite secure from certain disturbances, and they are in no way contradictory of the current view that these mechanisms are located in the blood-forming organs.

87. **Roentgen Ray and Antibodies.**—Repeated exposures of white rats to the Roentgen ray immediately after the injection of sheep blood did not interfere in any noteworthy degree with the production of lysin when the exposures, though sufficient to reduce the number of leukocytes in the blood, have no definitely detrimental effect on the general health of the animals. When the exposures are commenced some days before the injection of sheep blood and continued in such manner that the number of leukocytes is greatly reduced for from fifteen to twenty days after the injection of sheep blood, Hektoen found that the formation of lysin is restrained to a marked degree. This may be accomplished without any appreciable effect on the general health. In such animals the spleen, lymphatic tissues, and thymus are greatly reduced in volume and the bone-marrow changed. In the blood, the granular leukocytes are increased relatively and the total number of leukocytes is much below normal. A single prolonged and eventually fatal exposure to the Roentgen ray immediately before the injection of sheep blood may prevent any formation of lysin for the next eight days or so, or lysin may be produced after a longer period of latency than in the control animals. The results harmonize with the view that antibodies are produced in the spleen, lymphatic tissues and marrow, as these structures suffer most directly from the action of the Roentgen ray. The results indicate also that one reason why the lymphocyte appears to be an important agent of defense in tuberculosis and other conditions may be its power to form antibodies. In view of the destructive action of radium on the leukocytes and blood-making organs, it is altogether likely that it will be found to have the same general effect on the production of antibodies as the Roentgen ray.

89. **Fate of Foreign Erythrocytes in Rabbit.**—It is the purpose of Cary's paper to contribute evidence that foreign blood cells introduced into the circulating blood stream are engaged by and destroyed within certain fixed tissue cells of the liver and spleen.

Medical Record, New York

September 18, LXXXVIII, No. 12, pp. 467-508

90 Some Every Day Injuries to Eye, and What to Do for Them. R. Kalish, New York.
91 Epithelial Function in Relation to Disease. O. Paget, Freemantle, West Australia.
92 Syphilitic Arthritis. H. C. Stein, New York.
93 Does General Practitioner Utilize Means at His Disposal for Diagnosing Early Pulmonary Tuberculosis? J. S. Ford, Wallingford, Conn.
94 Use of Term "Psychanalysis" and Its Substitute. M. Solomon, Chicago.
95 Principles of Bromin Therapy in Epilepsy. E. S. Brodsky, Westport, Conn.
96 Health Week in Public Schools. A. W. Baird, New York.
97 Primary Mastoiditis; Report of Two Cases. C. B. Broder, New York.
98 Case of Intense Food Anaphylaxis. L. C. Frost, Los Angeles.
99 Case of Tetanus; Recovery. J. Murphy, Middletown, Conn.
100 Gout. M. Strunsky, New York.

New York Medical Journal

September 18, CII, No. 12, pp. 589-640

101 Gynecologic Aspects of Backache. G. W. Kosmak, New York.
102 Backache from Standpoint of Neurologist. M. Neustaedter, New York.
103 Influence of Civilization on Insanity. M. J. Karpas, New York.
104 Roentgen Rays in Study of Gastric Diseases. F. J. Dever, Philadelphia.
105 Foreign Bodies in Conjunctiva and Cornea. A. Brav, Philadelphia.
106 Hygienic Features of School Lunches. D. B. Armstrong, New York.
107 Maintenance Diet for Adults. R. H. Rose, New York.
108 Intraspinous Injection of Neosalvarsanized Serum. D. T. Miller, Terre Haute, Ind.
109 Formation of Urinary Calculi. B. G. R. Williams, Paris, Ill.
110 Cancer Problem. J. W. Long, Greensboro, N. C.
111 Refraction in Schoolchildren. A. S. Tenner, New York.
112 Hydatidiform Mole; Report of Eight Cases. J. F. Robertson, Philadelphia.
113 Indications for Surgical Treatment of Hyperthyroidism. T. Jameson, Rochester.

Oklahoma State Medical Association Journal, Muskogee

September, VIII, No. 4, pp. 121-152

114 Surgical Treatment of Potts' Disease. R. Walker, Pawhuska.
115 Congenital Dislocation of Hip. R. L. Hull, Oklahoma City.
116 Formaldehyd Treatment of Compound Fractures. W. W. Jackson, Vinita.
117 Diagnostic Value of Leukocyte Count. T. H. McCarley, McAlester.
118 Intussusception. W. H. Livermore, Chickasha.
119 Intestinal Obstruction. F. L. Carson, Shawnee.

Tennessee State Medical Association Journal, Nashville

August, VIII, No. 4, pp. 161-204

120 Diagnosis and Choice of Operation in Certain Affections of Stomach and Duodenum. J. M. T. Finney, Baltimore.
121 Some Features in Management of Infectious Diarrhea. O. H. Wilson, Nashville.
122 Epidemic Otitis Media; Study of Its Manifestations. R. McKinney, Memphis.
123 Diagnosis of Syphilis of Nervous System. A. W. Harris, Nashville.
124 Tuberculous Meningitis. K. S. Howlett, Franklin.

Texas State Journal of Medicine, Fort Worth

August, XI, No. 4, pp. 205-258

125 Purification of Public Water Supplies and Sewage Disposal in Texas. J. B. Hawley, Fort Worth.
126 Digestive Symptoms of Pellagra. S. Harris, Birmingham, Ala.
127 Pellagra; Its Way and Prevention. W. F. Thomson, Beaumont.
128 Treatment and Prevention of Pellagra. C. A. Smith, Texarkana.
129 Pellagra Clinic. O. M. Marchman, Dallas.
130 Helminthiasis at Texas State Orphans' Home. J. H. Frey, Corsicana.
131 Filterable Virus. D. Meredith, Wichita Falls.
132 Foreign Body in Mastoid Cells; Foreign Body in Left Bronchus. W. D. Jones and H. B. Decherd, Dallas.
133 Chronic Purulent Otitis Media and Complications; Report of Cases. H. T. Aynesworth, Waco.

Wisconsin Medical Journal, Milwaukee

August, XIV, No. 3, pp. 77-114

134 Etiology and Pathology of Puerperal Pelvic Infections. D. Hopkinson, Milwaukee.
135 Puerperal Infection. W. G. Darling, Milwaukee.
136 Cryptogenic and Allied Infections of Surgical Import. R. H. Jackson, Madison.
137 Hodgkin's Disease and Allied Affections. J. L. Yates, Milwaukee, and C. H. Bunting, Madison.
138 Prognosis in Traumatic Neuroses and Psychoses. F. C. Studley, Milwaukee.
139 Camp of Instruction for Officers of Medical Reserve Corps. W. G. Merrill, Grand Rapids.
140 Tetanus; Site of Infection Unknown, Recovery. J. R. Longley, Fond du Lac.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

July, III, No. 9, pp. 1-156

1 *Character, Significance and Prognostic Value of Peritoneal Exudates. R. B. Carslaw.
2 Results of Operation for Malignant Tumors of Breast. G. E. Armstrong.
3 Three Mesenteric Tumors. E. P. Gould.
4 Retroperitoneal Hernia Cured by Operation, Report on Literature. A. R. Short.
5 *Clinical Study of Actinomycosis, with Illustrative Cases. V. Z. Cope.
6 Unilateral Hemorrhage and Unilateral Pain of Renal Origin. C. Wallace and L. S. Dudgeon.
7 Myeloid Tumor of Tendon Sheaths. M. J. Stewart and E. R. Flint.
8 Contemporary French Surgery. T. Tuffier.
9 Gunshot Injuries of Skull. C. A. Joll.
10 Gunshot and Other Wounds. F. P. Connor and H. Mowat.

1. **Peritoneal Exudates.**—An estimation of the character, significance and prognostic value of peritoneal exudates was made by Carslaw. His results are based on an examination of eighteen cases of appendicitis, four cases of perforated gastric or duodenal ulcer, one of tubo-ovarian abscess, and of femoral hernia, operated on by him. He found that the mononuclear phagocytes in the peritoneal exudate consist of two different types of cells, endothelial cells and large mononuclear leukocytes, which not only have two distinct sources of origin, but also can easily be distinguished from each other in all stages of their functional activity by the indophenol-synthesis test for oxydase. Examination of the peritoneal exudate is of great prognostic value in cases of spreading peritonitis, as it indicates the amount and virulence of the bacterial invasion and the extent to which the reactive forces of the peritoneal cavity have been, or are being developed. In considering the significance of the relative number of the various cells, their phagocytic activity, and their healthy or degenerated character, the duration of the bacterial invasion must always be borne in mind. The contention that an immediate examination of the exudate in cases of spreading peritonitis supplies information which indicates whether drainage of the peritoneal cavity is necessary or whether primary closure may be employed, Carslaw says, must be modified by three facts, namely: (a) Local drainage is often necessary although drainage of the general peritoneal cavity may be not only unnecessary but also injudicious. (b) Drainage of the general peritoneal cavity is only called for in very exceptional cases. (c) Effective drainage of the general peritoneal cavity is impossible.

5. **Study of Actinomycosis.**—Cope urges that actinomycosis should always be considered in the diagnosis in the case of any newly formed subacute or chronic swelling in the region of the mouth, face, neck, thorax, or right side of the abdomen. Pus from every abscess should be examined as a routine practice. In any subacute or chronic lesion, the discharge needs to be examined repeatedly. Peribuccal infections comprise the majority of the cases. Here the organism enters most often through the mucous membrane of the alveolar margin near a carious or erupting tooth, or through the tooth socket into the jaw. The fungus is taken in with the food, and lodges round the teeth. The features of the hard peribuccal form are characteristic and can often be diagnosed long before pathologic investigation can give much help. Treatment by the administration of iodids, by vaccine therapy, and by surgical measures, promises the best results.

British Medical Journal, London

August 28, II, No. 2852, pp. 317-352

11 *Treatment of Gunshot Wounds by Excision and Primary Suture. H. M. W. Gray.
12 *Use of Certain Antiseptic Substances in Treatment of Infected Wounds. H. D. Dakin.
13 Use of Sleeve of Vein in Nerve Suture. A. Fullerton.
14 Treatment of Gunshot Fractures of Leg with Posterior Wounds. C. A. Morton.
15 Extraction of Foreign Bodies. J. R. Caldwell.
16 Open-Air Treatment for Wounds. W. E. Nelson.
17 Public Health Work of British Medical Association. H. Jones.

11. **Treatment of Gunshot Wounds.**—The advantages claimed for this method of treatment by Gray are: Healing by first intention is assured in the vast majority of properly selected cases. Much time is thereby saved. Some wounds, which would otherwise require months to heal, are soundly united in the course of from ten to fourteen days. The soldier is thus available for duty again at a much earlier date. The amount of attention required to be given by the medical officers and nursing sisters, etc., is greatly reduced. Much pain is avoided. The amount of dressings required is reduced to a minimum, and in this way expense is lessened. Complications which may arise from the presence of a septic wound are avoided. A more sightly scar is obtained. Because of the absence of the contraction which would accompany the formation of a large cicatrix, there is less impairment of function in the part concerned. In the case of head injuries, excision of the wound, especially in some, apparently trivial, injuries, provides a means of ascertaining, with greater certainty than by any other method, whether depressed fracture or injury to the brain coexists. Gray says that healing by first intention may be procured in practically all cases in which the surfaces of the new wound can be brought into accurate approximation without much tension. In rare cases, when the wound is deep, approximation in the depth has to be dispensed with and drains are introduced for a short period—until one is assured that aseptic healing will occur. In some cases it is necessary to adjust and fix the parts of the body adjacent to the sutured wound so that the fullest relaxation is secured. The mere length of a wound is no bar to operation. It is not necessary to wait until the wound is surgically clean, in fact, in most cases, the sooner the excision is made the better. Only when a large "bank" of inflamed tissue surrounds the wound is immediate excision inadvisable on account of the septic condition of the wound. By vigorous "salting" (hypertonic treatment) such wounds are usually rendered suitable for excision in from twenty-four to forty-eight hours. Other

contraindications are the presence of marked pocketing in the wound and the exposure of vascular or nerve trunks in the depths of the wound or exposure of bone which it is inadvisable or impossible to remove.

12. **Use of Certain Antiseptic Substances.**—The principle of the preparation advocated by Dakin is as follows: Chlorid of lime (bleaching powder) is decomposed with a solution of sodium carbonate and the filtered solution containing sodium hypochlorite together with a slight excess of alkali is mixed with boric acid in such quantity that the solution is acid to phenolphthalein suspended in water but still alkaline to litmus. The resultant solution contains a balanced mixture of hypochlorite and polyborates of sodium with small amounts of free hypochlorous and boric acids. Thus the irritating action of free caustic alkali is avoided, for even if momentarily formed it would be at once neutralized by the boric acid or acid borates present in the solution.

The preparation of a solution of suitable concentration for direct application, containing 0.5 to 0.6 per cent. of sodium hypochlorite is carried out as follows: One hundred and forty gm. of dry sodium carbonate (Na_2CO_3), or 400 gm. of the crystallized salt (washing soda), is dissolved in 10 liters of tap water, and 200 gm. of chlorid of lime (chlorinated lime) of good quality is added. The mixture is well shaken, and, after half an hour, the clear liquid is siphoned off from the precipitate of calcium carbonate and filtered through a plug of cotton; 40 gm. of boric acid are added to the clear filtrate, and the resulting solution is ready for use. A slight additional precipitate of calcium salts may slowly occur, but it is of no significance. The solution should not be kept longer than one week. The boric acid must not be added to the mixture before filtering, but afterward.

A stronger solution may be prepared by decomposing chlorid of lime with sodium carbonate in the proportion of 150 gm. of the former to 105 gm. of the latter dissolved in a liter of water. The mixture is filtered and a measured portion of it (20 c.c.) is rapidly titrated with a boric acid solution of known strength (31 gm. per liter), using phenolphthalein suspended in water as indicator, in order to determine the amount of solid boric acid to be added to the rest of the filtrate. An excess of boric acid should be avoided, so that it is best to add slightly less than the calculated amount. An ordinary alcoholic solution of phenolphthalein cannot be used as indicator, as the alcohol is at once attacked. The concentrated solution thus prepared contains about 4 per cent. of sodium hypochlorite, and should be mixed with six parts of water before use. It can be kept for a month without serious decomposition.

Presse Médicale, Paris

August 26, XXIII, No. 39, pp. 313-320

18 Indirect Injury of the Nervous System from Air Concussion. P. Ravaut.
19 Therapeutic Injection of Human Blood Serum. P. Tariel.

Archiv für klinische Chirurgie, Berlin

CVII, No. 1, pp. 1-194. Last indexed August 21, p. 745

20 *Generalized Fibrous Ostitis with Tumors and Cysts. (Von Recklinghausen'sche Knochenkrankheit, zugleich ein experimenteller Beitrag zur Aetiologie der Knochencysten.) F. Lotsch.
21 Gunshot and Shell Wounds of the Brain and Their Operative Treatment. (Verletzungen des Gehirns.) W. B. Muller.
22 Muscle Grafting to Correct Paralysis of Shoulder Muscles. (Ueber Muskelüberpflanzungen am Schultergürtel.) M. Gerulanos.
23 Technic for Resection of the Stomach. (Nochmals zur Technik der Magenresektion.) H. Finsterer and H. v. Haberer.

20. **Generalized Fibrous Ostitis with Tumors and Cysts.**—This study of von Recklinghausen's disease of the bones fills 137 pages. Lotsch analyzes what has been written on the subject and also on similar disease affecting a single bone; then he describes the clinical experiences with it at the Charité Hospital at Berlin and the pathologic anatomic findings, and concludes with the report of considerable experimental research in the effort to learn the cause of the trouble. He thus gives the details practically in full of thirty-seven cases from the literature or his own service. The bones grow smaller and seem to crush down, an "Insichzusammensinken." It is a systemic affection of the skeleton, and the cause must be some noxious influence reaching the entire bone system by way of the blood. A direct bacterial cause he regards as extremely improbable, but there is much to sustain the assumption of an indirect influence from bacterial infection, the latter inducing some upset in the system of glands with an internal secretion. His fifty-two experiments on twenty-six rabbits demonstrate that a purely traumatic origin of bone cysts is apparently out of the question. Six double plates accompany the article.

Berliner klinische Wochenschrift

August 9, LII, No. 32, pp. 841-864

24 *Surgeon's Disinfection Dermatitis and Hand Eczema. P. G. Unna.
25 Experiences with Tetanus in the Western Battlefields. O. Klieneberger.
26 Recent Studies in Pancreatic Secretion. M. Einhorn (New York).
27 Treatment of Fracture of the Femur in War. (Oberschenkelschussfrakturen im Kriege.) M. Alexander.
28 *The Mosquito Plague. (Zur Stechmückenbekämpfung.) A. Zucker.
29 Typhus and Its Prophylaxis; Possibility of Air Contagion. (Flecktyphus als Kriegsseuche.) F. Wolter.

24. **Surgeon's Hand Dermatitis and Eczema.**—In this first instalment of his eighteenth "War Aphorisms of a Dermatologist," Unna comments on the revolution in ideas regarding the germs already in the skin. They are no longer regarded as very dangerous, and it is now realized that no amount of scrubbing will get rid of them all. Consequently surgeons aim now merely to cover up and hold back the germs already in the skin. This can be done with rubber gloves but Unna says that the same effect can be realized, while at the same time warding off dermatitis, by soaping the hands thoroughly with a good overfatted base soap, the basis for medicated soaps. This soap froth is thoroughly rubbed into the hands; then the hands are wiped off with a dry towel, not rinsing with water, and this leaves a coating of soap on the hands, like a varnish. If it rubs off, it can easily be renewed at any time during the operation. But the great advantage of this base soap coating is that it soothes the skin and protects it against injury from the disinfectant used afterward, mercuric chlorid, for example, which works into the soap and is readily rinsed off with the soap later. Interposing the base soap thus, between the mechanical and the chemical sterilization of the surgeon's hands, wards off dermatitis or heals it if already developed. Certain skins are more sensitive to certain disinfectants than others, and by changing the disinfectant the resulting dermatitis usually heals of itself. The use of the base soap renders unnecessary any scrubbing with hard brushes, which, he declares, dermatologically speaking, is the worst that could befall a surgeon's hand: it never ensures absolute asepsis, while it throws open the portals to the real foes, the pus cocci. He discriminates carefully between disinfection dermatitis and eczema, remarking that pure forms of either are rare, the two being generally associated. The base soap interlude, however, is the most effectual means for preventing the development of eczema.

28. **Mosquitoes.**—Zucker remarks that the hot summer of 1915 has bred unusual numbers of mosquitoes and he describes the various methods in vogue for killing or repelling them. He adds that when the mosquito sucks blood it injects into the wound a secretion from its salivary gland which contains formic acid and lactic acid. Treatment should aim to neutralize this acid, and almost any alkaline fluid will accomplish this if applied at once. After the local reaction has set in, benzin is an excellent means to soothe the itching.

Deutsche medizinische Wochenschrift, Berlin

August 19, XLI, No. 34, pp. 997-1024

30 Diagnosis of Heart Disease by the Ordinary Methods of General Practice. (Diagnostik der Herzerkrankungen.) H. Rosin. Concluded in No. 35.
31 *Innervation of the Kidney. (Innervation der Niere.) L. Asher.
32 *The Anatomic Changes with Inherited Disease, Especially Diabetes. (Die anatomischen Veränderungen bei erblichen Krankheiten.) H. Ribbert.

33 Absolute Unreliability of Certain Tablets Claimed to Sterilize Water in Fifteen Minutes. (Katacid-Tabletten.) P. Köthner.
34 *Isolated Vestibular Neuritis After Antityphoid Inoculation. C. Hirsch.
35 Technic for Wholesale Production of Cholera and Typhoid Vaccines. F. Ditthorn and W. Loewenthal.
36 Changes in Fundus of Eye After Skull Wounds. (Zur Kenntnis der Augenhintergrunds-Veränderungen nach Schädelverwundungen.) A. v. Szily.
37 *Thyrotoxic Heart Disturbances, etc., Among the Soldiers. (Bedeutung und Verbreitung der Thyreose im Heere.) L. Caro.
38 Stereoscopic Localization of Projectiles. G. Martin.
39 *Fatal Alveolar Pyorrhea. W. N. Clemm.

31. **Innervation of the Kidneys.**—Asher has been studying the secretory innervation of the kidneys by a new method of research. Among the facts learned by it is that the kidney possesses a nervous apparatus both for stimulation and for inhibition. The latter is much the stronger of the two. The kidneys do not require these nerves for their functioning. The metabolism alone gives plenty of stimulation for their secreting work, but in case this stimulation should be excessive at any time, the nervous system is ready to check and regulate it.

32. **The Anatomic Changes in Inherited Disease.**—Ribbert thinks that important information might be derived from comparison of conditions in the organs of cadavers with inherited and acquired forms of a disease. It might be possible thus to discover certain differences which might throw light on the etiology of the disease. He found an abnormally small number of the islands of Langerhans at necropsy of a man of 31 with fatal diabetes. In a series of twenty-five sections of the pancreas he found only one unmistakable island and none at all in numerous other sections taken from different parts of the organ. It is possible that one or more of the structural "building stones" may be lacking. In examining the pancreas in diabetes, it should be noted whether the disease is of the inherited or acquired type, and the differential features should be recorded.

34. **Isolated Neuritis Following Inoculation against Typhoid.**—Hirsch comments on the few serious by-effects that have been observed following antityphoid vaccination. He knows of only the three cases reported by Toenissen in which severe acute infection followed the inoculation; and one patient had actual typhoid with a fatal outcome. More or less disturbance of the general health is common, sometimes with nausea and vomiting or slight diarrhea, headache or dizziness. The latter is comparatively frequent in women inoculated during a menstrual period. He has recently encountered a case in which the first injection was borne with only a slight reaction but the second was followed after an interval of twenty-six hours by vertigo which became so intense in half an hour that the patient, a staff surgeon, was unable to stand. He vomited and at the slightest movement of his head vomited anew. During the night his pulse went down to 60 and the respiration rate was also reduced and he felt cramps in the temporomaxillary articulation, numbness in the fingers, cold sweat and buzzing in the head. No material improvement was observed during the following days, and he was convinced that some local cause, embolism or thrombosis or an abscess in the left cerebellum was responsible for the symptoms, and applied for operative relief. There was a pronounced tendency to stagger toward the right side, and the right tympanic membrane looked red. The eye findings were normal but the symptoms and responses to various tests indicated irritation of the vestibular branch of the eighth nerve. Typhoid is known to affect this eighth nerve at times, but the neuritis usually retrogresses, so that only three cases with histologic examination are known. In the cases on record the cochlear part of the nerve was involved; this isolated disturbance in the vestibular branch is exceptional. The symptoms in this patient have been gradually subsiding so that by the end of the fourth month he had resumed his surgical work in his home. There is no dizziness now except occasionally slight vertigo on abrupt movement of the head.

37. **Thyrotoxic Heart Disturbances Among the Troops.**—Caro relates that in the fortress hospital in his charge at Posen, he found signs of excessive or perverted functioning of the thyroid as the main disturbance in 66 of his first 600 patients; and in 420 others it formed part of the clinical picture. In the 66 cases of actual thyrosis, as he calls it, 11 presented gastro-intestinal symptoms as the principal disturbance and these were manifest also in 64 of the group of 420. Thus gastro-intestinal disturbance was evident in one sixth or one seventh of all the cases. It was mainly in the form of gastralgia, loss of appetite, eructations and sometimes a tendency to vomit. This is the more remarkable. Caro adds, because in the 4 among the total 600 in which there was actual gastro-intestinal disease, there were no signs of thyroid disturbance. In 34 of the group of 66 there was an unmistakable tendency to goiter, and in 254 of the group of 420 mentioned above the thyroid could be palpated. Among the total 486 men with thyroid symptoms he found signs of an apical process, probably of tuberculous origin, in 210 cases. He warns expressly against iodin when there is a possible tendency to thyrosis. The predisposition to the latter rests on a congenital instability of the vasomotor nervous system, and this in turn rests on the unstable balance of the organs with an internal secretion. The thyroid plays the leading part, as a rule, as it is so readily upset by nervous or psychic influences or infections or fatigue. Differentiation is important because treatment should be the reverse of that ordered with organic heart disease. The latter requires rest and sparing of the heart, while the thyrotoxic cardiovascular symptoms are benefited by exercise in the open air. Chief among the symptoms is tachycardia, with or without palpitations. It develops during exercise but rapidly subsides in repose. The heart action is lively, sometimes shaking the chest wall. This exaggeration of the heart and pulse beat is characteristic, as the blood pressure is not found high, at least during repose, unless it is a complication.

39. **Fatal Alveolar Pyorrhea.**—Clemm's case demonstrates that a simple alveolar pyorrhea of the lower jaw in an adult may lead to total destruction of the jaw bone, without involvement of any other organ, and entail fatal sepsis notwithstanding free outlet to the pus.

Medizinische Klinik, Berlin

August 8, XI, No. 32, pp. 877-904

40 *Differential Diagnosis of Hysteria, Psychopathic Constitution and Insanity in Soldiers. K. Bonhoeffer.
41 *Starch Malnutrition and Resulting Disturbances. (Mehlnährschaden.) E. Klose.
42 Improved Technic for Resuppuration. E. Hayward.
43 *Mistaken Diagnoses of Pulmonary Tuberculosis in Recruits. (Die Fehldiagnose Lungentuberkulose bei Beurteilung der Felddienstfähigkeit.) K. Blumel.
44 *Attacks of Auricular Fibrillation. (Anfälle von Vorhoflimmern.) H. Popper.
45 *Deficient Thyroid Functioning in Children. (Zur Klinik infantiler Hypothyreose.) L. R. v. Korczynski. Commenced in No. 31.
46 *Formaldehyd as Fly-Killer. Wolf.

40. **Differentiation of Hysteria and Psychopathic Constitution from Insanity.**—Bonhoeffer says that the aspect of the psychiatric wards at the Berlin Charité Hospital is remarkably different now from what it was before the war. Then hysteria was practically restricted to the women's wards, but now the men's wards are crowded with all forms of hysteria and psychopathies with epileptiform traits, degenerates and actual insane. The necessity for careful differentiation is obvious as the proper treatment for one may be harmful in the others or at least waste time and effort, as when a hysteric paralysis is treated as for organic disease, or an actually insane person is isolated and treated by suggestion. Differentiation requires prolonged study of the case, as a rule, and this is practically impossible in the field. The emotional or mental reaction after some unusual action is often decisive, but objective tests fail to give reliable findings in the early stages.

41. **Malnutrition and Infant Feeding.**—Klose defines the German term Nährschaden as a pathologic composition of the body in consequence of defective utilization of the food. There is partial inanition, as when the child is unable to utilize the starch it is taking or it does not get the proper amount of indispensable elements in its food. The disturb-

ances resulting from starch malnutrition may be of three types, the atrophic, the hydremic and the hypertonic. The atrophy does not differ from that with ordinary chronic nutritional disturbances but the hydremic type is peculiar. The child looks well and plump, may even increase in weight and the mother is proud of her chubby babe. But closer examination shows that the chubbiness is due to a certain puffiness of the tissues, a doughiness. Even the fat on the body feels spongy. In short, it is not a normal healthy taking on of fat, but a pathologic saturation of the tissues with water. This doughy habitus may gradually develop into pronounced alimentary edema. The water-soaked tissues point to some far-reaching chemical change in the tissues. Changes in the water-binding properties of the colloids and shifting of the mineral deposits accompany this hydremia. The water-soaked tissues yield readily to infection of all kinds; even slight degrees of the hydremic type entail a marked reduction of immunity. The dangers to which such infants are exposed are hence quite serious.

With the doughy and the hydremic types there is profound modification of the entire metabolism, but this is still more pronounced in the hypertonic type. The legs or arms or both are drawn up against the trunk, but the contraction can be actively and passively overcome, which is not the case with true contracture. This peculiar tension of the muscles may keep up for weeks and months in infants; even the muscles of the trunk may be involved. This hypertonic condition is usually more pronounced the younger the child, and it indicates a serious disturbance in the metabolism, changes in the chemistry and in the physical chemical properties of the tissues, particularly of muscle tissue. Conditions right themselves, even on breast milk, extremely slowly if at all. At necropsy of a four weeks' infant with the extreme hydremic type of starch malnutrition, not only the skin, but also the muscles and the bones contained an excess of water. The internal organs showed comparatively least water, with abnormally small ash content. The prognosis is always grave with severe starch malnutrition. The danger with the milder, doughy form is that parents and physician are liable to mistake the puffiness for the chubbiness of health, and hence allow the malnutrition to progress into the more serious and incurable types.

43. **Mistaken Diagnosis of Tuberculosis.**—Blümel urges that lung specialists should be sent to examine the troops as he has found that numbers of men discharged from the service on account of tuberculosis in reality were either free from the disease or it had entirely healed. When a man coughed and showed a certificate of dismissal from some sanatorium, the army medical officers sent him back from the front without further ado, but 80 per cent. of those sent back from the front on this account proved to be nontuberculous. A mistaken diagnosis of tuberculosis may blast a man's whole career and life, prevent marriage and self-support. On the other hand, actual tuberculous lesions usually prove rapidly destructive in the conditions of war. The only solution of the problem, he declares, is to have the apical lesions examined by a lung expert, and specialists should be sent around among the troops for this purpose.

44. **Paroxysmal Auricular Fibrillation.**—Popper reports the case of a woman of 63 who for years has had attacks of completely irregular heart action, which the tracings explain as due to auricular fibrillation. During the intervals the pulse ranges from 76 to 116 under excitement. The attacks of arrhythmia now return every two or three days and last from a few minutes to forty-two hours. The highest pulse noted was 190. There is no special depression after the attack, and the woman sleeps well. Physostigmin had no influence on the attacks but on two occasions a single dose of 0.5 gm. quinin seemed to abort the attack—the first time that any drug had been able to do this. It seems probable that quinin may thus be counted on for a specific action on auricular fibrillation, like that of physostigmin on heart block. There is thus one group of cases of total arrhythmia in which the disturbance occurs only transiently and at intervals over long periods of years, and it has a comparatively favorable prognosis.

45. **Thyroid Insufficiency in Children.**—A striking case is reported by Korczynski in which inherited syphilis seems to have impaired the functioning of the thyroid, hypophysis, ovaries, blood-producing organs and, through the aorta, the circulatory apparatus. The child was mentally backward. Thyroid treatment and treatment for the syphilis were given together, and a pronounced change for the better was soon apparent and has continued to progress. The mind seemed to be roused from its lethargy and, as the physical development progressed, the skin became of normal aspect, the blood production came to approximate normal, and there was a hint of development of sexual characteristics.

46. **Flies and Mosquitoes.**—Wolf has found formaldehyd an excellent fly poison, added to a little milk or beer and distributed in plates, one teaspoonful formaldehyd to ¼ liter of milk or beer. Mosquito bites cease to itch and do not swell, he states, if they are dabbed with a mixture of 0.01 part menthol, 3 parts formaldehyd and 7 parts alcohol.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

August, XLII, No. 2, pp. 95-198

47 *Epidural Anesthesia. (Erfahrungen über Sakralanästhesie bes. bei gynäkologischen Operationen.) E. Kehrer.
48 Varicose Veins in the Uterus. (Plexus venosus varicosus endometrii.) O. Frankl.
49 *Causes, Prevention and Treatment of Artificial Perforation of the Uterus in Abortion Cases. B. Schweitzer.
50 *Treatment of Febrile Abortion. W. Benthin.

47. **Sacral Anesthesia.**—Kehrer has applied the high sacral or epidural technic in 140 cases for gynecologic operations. In 82.1 per cent. of his cases the anesthesia was profound and lasted for sixty or seventy minutes; in 10 per cent. the anesthesia was not quite complete, and no effect was apparent in 7.8 per cent. of the patients; probably the injected fluid went astray in these refractory cases. The literature on the subject is cited, and over twenty pages are devoted to the summaries of his 140 cases in turn, classified according to the operation. He gives illustrations of the exact technic, and expatiates on the advantages of the relaxation of the anterior walls of the abdomen, and the total absence of postoperative nausea, vomiting and headache. He follows Cathelin's technic but injects larger amounts than others have advocated. His dose is usually 60 c.c. of a 1.5 per cent. novocain-sodium bicarbonate solution, with a little epinephrin, and other sodium salts. He regards the method as most excellent for gynecologic operations but rejects it for obstetric work and obstetric operations, for reasons which he enumerates.

49. **Perforation of the Uterus by Curet after Abortion.**—Schweitzer describes how artificial perforation is liable to occur and how it can be prevented, and the best means to treat it. In 27 cases on record in which conservative treatment was applied, 2 of the patients developed fatal peritonitis. In 36 cases treated by operative measures only one patient died from peritonitis. The difference is thus between 11 per cent. mortality in the conservative and 2.8 per cent. in the radically treated cases. The cases with preexisting peritonitis are not included in these groups. The practical conclusions from this analysis of 105 cases in the literature, including 8 from the Leipzig gynecologic clinic, are that expectant treatment is justified only when the perforation is small, and there is no suspicion of infection, the intestines not injured, and the uterus entirely empty. Under other conditions a laparotomy is required, removing the uterus if infection is installed. If the perforation is small and aseptic conditions prevail, the uterus can be sutured before the abdomen is closed. The main point in treatment, however, is to make the diagnosis promptly and place the patient in the proper hands for treatment with the least possible delay.

50. **Treatment of Febrile Abortion.**—Benthin pleads for expectant treatment at least until one's hand is forced, pointing to the morbidity of only 9.8 per cent. and mortality of 0.8 per cent., under conservative measures, in the statistics he has compiled from the literature. On the other hand, with active measures the morbidity was 29 per cent. and the mortality 9.8 per cent. Most striking of all is the mortality with hemolytic streptococci: 31.2 per cent. with active treat-

ment and zero with conservative. In Winter's service at Königsberg in ten recent cases of infected abortion with hemolytic streptococci all the women recovered under expectant treatment, while of three others given active treatment all died although all were previously robust. When no hemolytic streptococci are found, the prognosis is favorable any way, and active measures are justified and useful. The strictly conservative standpoint is reserved for the cases showing hemolytic streptococci. The curet should never be used, merely the finger, to clear out the uterus; only when the finger is unable to clear it out is the curet or forceps permissible.

Münchener medizinische Wochenschrift, Munich

August 17, LXII, No. 33, pp. 1105-1140

51 *Quantitative Color Test for Uric Acid in the Blood. (Eine Methode zur quantitativen Bestimmung der Harnsäure im Blut.) C. Maase and H. Zondek.
52 Case of Intermittent Ileus with Wandering Kidney. H. B. Hügelmann.
53 *Silver Cannula Drain for Purulent Pleurisy. (Empyembehandlung mittels Kanüle.) O. Rüdel.
54 *Night Blindness in Soldiers. (Nachtblindheit im Felde.) F. Best.
55 Cardiovascular Phenomena During Convalescence from Typhoid. (Erscheinungen am Zirkulationsapparat in der Typhusrekonvaleszenz.) F. M. Groedel.
56 Intravenous Ether-Salt Infusion in Tetanus. F. Hercher.
57 Localization of Foreign Bodies Especially After Injury of the Eye. (Fremdkörperbestimmung.) J. Duken.
58 Roentgen Localization of Foreign Bodies in the Depths. E. Gruenhagen, E. Runge and J. Cromback.
59 Electric Probe for Foreign Bodies. S. Loewenthal and J. Nienhold.
60 Device for Measuring Foreign Bodies and Growths in the Bladder. (Neues, direktes optisches Messverfahren zur Messung von Fremdkörpern und Neubildungen in der Blase.) E. Herzberg.
61 Improved Technic for Plaster Casts and Extension. H. Hans, A. Riffel and W. B. Müller.
62 The Ultimate Outcome of Gunshot and Shell Wounds of the Spinal Cord. (Das nächste und weitere Schicksal der Rückenmarksschussverletzungen; ein theoretischer Vorschlag zur Beeinflussung desselben.) R. Spoerl.

51. **Test for Uric Acid in the Blood.**—Maase and Zondek describe a technic which is comparatively simple and requires only 5 c.c. of blood and an hour and a half of time, while the findings harmonize with those obtained with the more complicated methods. Their technic is based on the action of acetic and phosphotungstic acid.

53. **Drainage with Purulent Pleurisy.**—Rüdel has been able to cure a number of patients with pleural empyema or effusion by introducing a retention drain in the form of a silver cannula about 10 cm. wide, 5 mm. thick, and about 5 cm. long. The diameter of the tube thus forms a very broad oval, so large that it fits comfortably in an interspace and permits the escape of even thick pus. This renders resection of ribs unnecessary in treatment of empyema, and his experience with this method has been extremely satisfactory during the years he has been using it.

54. **Night Blindness in Soldiers.**—Best relates that he has recently encountered thirty-six cases of hemeralopia in soldiers at the front. It was of long standing in the majority, traceable to inherited taint or some anomaly in refraction. It may not have given any trouble before, but under the stress of war pronounced hemeralopia became evident. The extreme form of night blindness disqualifies a man for service at the front.

Zentralblatt für Gynäkologie, Leipzig

August 21, XXXIX, No. 34, pp. 587-610

63 *Autoinfection of Parturients. (Ueber Selbstinfektion.) W. Benthin.

63. **Autoinfection of Parturients.**—Benthin comments on the confusion that prevails as to what is meant by autoinfection in these circumstances. The only reliable criterion is the determination of the presence or absence of pathogenic germs in the vagina. Bacteriologic control is indispensable for this, a positive knowledge of the bacterial flora. The occurrence of pathogenic bacteria in the secretions of the healthy, their varying importance in respect to the prognosis, the frequency of infection of the carriers—all these have to be considered in discussing the question of autoinfection, and all have a direct bearing on its solution. Rhinology, otology and ophthalmology have long recognized that pathogenic germs may be present in the nose, ear and eye of the apparently healthy and cause no trouble under ordinary conditions. But they are liable to start mischief at once if an operation is done or the vitality of the region is depressed from any other cause.

Bacteriologic control will reveal the presence of hemolytic streptococci, and when these are discovered in the vagina, internal maneuvers should be restricted to the utmost and operative measures entirely rejected until the hemolytic bacteria can be banished. It is scarcely possible, he remarks, to get rid of them by mechanical measures, flushing out the vagina. But they can be reached by prophylactic vaccine therapy. Bacteriologic control throws light on the prognosis and enables the carriers and the sick to be segregated. Infection brought from without is becoming more and more rare every year; the modern aseptic management of childbirth has almost reached the limits of the possible. The fact that instances of puerperal fever still occur testifies that the infection is the work of endogenous germs rather than the consequence of a broken link in our chain of aseptic measures.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 13, XXXVI, No. 56, pp. 865-880

64 *Sterilizing Rubber Gloves in Denatured Alcohol. G. Cocci.

August 23, No. 57, pp. 881-896

65 *Phenol in Epidemic Cerebrospinal Meningitis. (2 casi di meningite cerebro-spinale epidemica guariti con la cura di acido fenico alla Baccelli.) M. Bellotti.

64. **Sterilizing Rubber Gloves.**—Cocci places the rubber gloves in a large jar of denatured alcohol and relates that this sterilizes them completely without injuring the gloves in the least. Gloves have been kept for months in the denatured alcohol without apparently detracting from their strength and durability. He has been sterilizing gloves in this way for over a year, and has found it entirely reliable. The gloves are left in the alcohol for twelve hours at least. After the operation the gloves are washed in soapy hot water, rinsed in alcohol and then returned to the jar where they are left till needed for an operation. He does not mention the method applied in denaturing the alcohol.

65. **Phenol in Meningitis.**—As a last resort in acute cerebrospinal meningitis in two sisters of 8 and 11, Bellotti gave them subcutaneous injections of phenol and morphin according to Baccelli's method of treating tetanus. The dose was 0.01 gm. of phenol with 0.005 gm. or half this of morphin, dissolved in 1 gm. of distilled and sterilized water. This dose was repeated during the day and following days until the children had taken 0.75 gm. of the phenol without the urine turning black or any other symptom of phenol poisoning manifesting itself. Most of the subcutaneous injections were made by the mother whenever the fever began to go up or the pains to increase. Improvement was evident after a few injections, and by the twentieth day the children were able to sit up and play and the cure was soon complete without complications. The subcutaneous route seems better adapted for the purpose.

Pediatria, Naples

August, XXIII, No. 8, pp. 561-624

66 Malta Fever in Children. (La febbre melitense o mediterranea o ondulante nei bambini.) O. Cozzolino.
67 *Etiologic Relation Between Chronic Hydrocephalus and Inherited Syphilis. S. De Stefano.
68 Noguchi's Luetin Reaction in Inherited Syphilis. G. Gatti and E. Bellomonte.

67. **Chronic Hydrocephalus and Inherited Syphilis.**—Stefano writes from the pediatric clinic at Naples in charge of Professor Jemma to call attention to thirty-five cases of chronic hydrocephalus to show its connection with inherited syphilis. In only two of the total thirty-five was the Wassermann reaction negative, both in the children and in the parents. One of these two children had spina bifida and other deformities. Rhinitis and enlargement of the spleen were noticeable in twenty of the thirty-five cases. The causal connection between the inherited taint and the chronic hydrocephalus was thus unmistakable, but treatment based

thereon was very disappointing; the hydrocephalus showed little if any tendency to retrogress under vigorous treatment of the inherited taint. It seems to be on about the same plane in this respect as tabes and progressive paralysis.

Policlinico, Rome

August 22, XXII, No. 34, pp. 1125-1160

69 Wounds of the Ears in War. (Traumi di guerra dell'orecchio.) G. Ferreri. Commenced in No. 32.
70 Interrupter for Alternating Electric Current. G. C. Trabocchi.

Riforma Medica, Naples

August 21, XXX, No. 34, pp. 925-952

71 What Is Meant by Sporotrichosis? R. Campana.
72 Cancer of the Rectum. (Contributo allo studio dei carcinoma e sarcomi del retto.) P. Marogna. Commenced in No. 32.

Brazil-Medico, Rio de Janeiro

August 8, XXIX, No. 30, pp. 233-240

73 *Pathologic Relations Between Liver and the Spleen in the Tropics. (Relações pathologicas entre o figado e o baço; aspectos clinicos da pathologia hepato-esplenica nos climas quentes.) C. Fraga. Commenced in No. 29.

August 15, No. 31, pp. 241-248

74 The Usual Reflexes and Those Not So Well Known in Examination of the Nervous System. T. Mendes. Concluded in No. 32.

73. **Pathologic Interdependence of Spleen and Liver in Tropical Diseases.**—Fraga emphasizes the fact that the spleen is the main rallying point for the hematozoa in malarial fever, and the enlarged spleen may dominate the clinical picture. The liver becomes affected only later; in acute malaria it does not seem to suffer much and soon recuperates. Even in chronic malarial fever the lesions in the liver, he affirms, are not so serious as generally considered. The sagging of the liver may be mistaken for its enlargement. Even if it is enlarged, this is no criterion as to functional incapacity, so that it is impossible to estimate the true state of the liver without applying functional tests in addition to the physical examination. When the liver is much hypertrophied and acting badly, it will often be found that improper habits of eating or drinking contribute to its pathology. He has been systematically applying the principal functional tests to the liver in chronic malaria, and has been surprised to find how slight its influence on the liver functioning. The liver disturbances are secondary to the malarial spleen, and they soon subside, as a rule, after splenectomy. This is the rule also in Malta fever and in bacillary dysentery, but the ameba attacks the liver directly and the spleen suffers only secondarily to this. He remarks that kala-azar has not yet been recognized at Bahia, where he is professor of internal medicine. In Chagas' "American trypanosomiasis" the liver becomes much enlarged, showing in acute cases a fatty degeneration comparable only to the steatosis of the viscera in yellow fever. In the chronic form the liver suffers principally from the weakness of the heart infested by the parasites. Fraga is inclined to think that the liver disturbances in tropical countries are unjustly ascribed to the climate in many instances when in fact the liver is suffering from the results of unhygienic living, aping the diet and clothing of colder countries, excesses in drinking and in the use of pungent condiments and of canned or dried meats, etc.

Semana Medica, Buenos Aires

July 1, XXII, No. 26, pp. 1-28

75 Classification of Chronic Nephritis. J. J. Viton.
76 Vaccine Therapy of Streptococcus and Gonococcus Affections. (Caso de septicemia estreptococcica curado con la vacuna colibacilar Kraus-Mazzo.) J. R. Goyena. (Algunas Vacunas.) A. Gutierrez. (La nucleo-proteina gonococcica en el tratamiento de las complicaciones de la blenorragia.) E. F. Solari.

July 8, No. 27, pp. 29-56

77 Argentine Milkweed as Galactagogue. (El Tasi: Morenia brachystephana, galactogeno ideal.) A. D'Alessandro.
78 Bilateral Decapsulation and Nephrotomy for Toxic Anuria After Chloroform. E. T. Lastra.
79 *First Stage of Alimentary Decomposition (Malnutrition) in Infants on Milk Diet. (La distrofia lactea.) E. Gaing.

July 15, No. 28, pp. 57-94

80 *Gas in the Gravid Uterus; Fourteen Cases. (Fisometra ovular.) E. A. Boero.
81 Agglutination in Testing for Tubercle Bacillus. (La accion aglutinante en la investigacion del bacilo de Koch.) J. M. Hitce and R. Iribarne.

July 22, No. 29, pp. 95-124

82 *Wandering Spleen. (Caso de esplenoptosis.) J. Salvador.
82 *Four Practical Urologic Suggestions. A. F. Ortiz.
84 Artificial Pneumothorax in Pulmonary Tuberculosis. (La neumocolapsoterapia.) C. Ferreira.

July 29, No. 30, pp. 125-154

85 Serotherapy of Bubonic Plague. J. Moreno.
86 Neosalvarsan in Treatment of Gangrene. B. N. Calcagno.

79. **Alimentary Decomposition.**—Gaing applies the term "milk dystrophy" to the condition to which he refers, an upset in the nutritional balance in children on cow's milk. The organism reacts to each kind of food in a special manner, and there are as many types of this, he says, as there are combinations of infant foods. Many cases of assumed "anemia," "debility" and "defective development" are in reality merely the result of alimentary dystrophy, a pathologic make-up of the organism as the result of unsatisfactory utilization of the food supply. The child is not adequately nourished, but the blood count may be normal although the blood displays a tendency to accumulate in the abdominal organs, leaving the skin pale and dry, and setting up tympanism. The muscle system is weak and the children whimper and are restless. The pulse keeps normal but the temperature runs a zigzag course to just below the fever point. The abdominal walls are flabby, while there is pronounced hypertonicity with disturbances from a starch diet. The urine contains indican but no albumin or sugar; the stools are dry, whitish or greyish, and do not stick to the diaper as they contain insoluble fatty soaps, and there may be a tendency to constipation.

This "milk dystrophy" is essentially chronic, but the younger the infant, the more rapidly it reaches an irreparable stage. The alimentary disturbance is qualitative, not quantitative, and the principle in treatment is to reduce the fat in the milk and replace it with carbohydrates or, better yet, change to breast-milk. On this the weight generally drops off during the first few days, probably on account of the lesser quantity of salts in breast-milk and the consequent change in the balance of water. Some infants do better on buttermilk or skimmed milk on account of the large proportion of albuminoids and salts, as the infant has been losing salts so constantly during the dystrophy, especially with excessive elimination of lime.

80. **Gas in Gravid Uterus.**—Boero refers to "ovular physometra," as he calls it, that is, gases generated in putrefaction of the fetus or infection of the amniotic fluid or of relics of the ovum. He reports fourteen cases in detail to show the clinical picture presented in these various types. He adds that in each instance this complication might have been avoided if the condition of the ovum and the obstacles to its spontaneous expulsion had been recognized in time. The attending physician, he declares, had been incompetent and, what generally accompanies this, had probably sinned against asepsis. The pathognomonic sign of physometra is the resonance of part or the whole of the uterus on percussion. Irritating fluids escape from the uterus and during contractions fetid gas may be expelled. As a rule the general condition seems relatively good unless the woman is exhausted from protracted labor. Prophylaxis is the main point; every pregnant woman should be impressed with the importance of notifying her physician whenever the bag of waters ruptures. Chills without fever afterward are a sign that the fetus has recently died. He warns against artificial rupture of the fetal membranes before the cervix is entirely dilated unless serious complications compel this. With premature spontaneous rupture he keeps the woman in bed under constant oversight of temperature, pulse, vaginal secretions and fetal heart beat until labor commences. If the temperature goes up and the walls of the uterus cease to be relaxed, that is, retract instead of contracting, and if there is escape of meconium and the pulse rate accelerates, he advises to empty the uterus at once, as also when labor has continued for twenty hours with a primipara and twelve for a multipara.

The child born living from the gas-filled uterus must receive special preventive care, washing with some antiseptic soap and anointing it with a mixture of 5 parts formaldehyd in 50 parts each of alcohol and glycerin. The mouth, nostrils and ears should be sterilized with a 1:1000 solution of oxycyanid of mercury. The cord should be painted with tincture of iodin and wrapped in medicated gauze. A castor oil purge should also be given to carry off any septic fluid it may have swallowed.

82. **Movable Spleen.**—The woman of 33 had movable spleen and movable right kidney. The other kidney had also been movable and had been fastened in place five months before but the disturbances persisted and were traced to the movable spleen. Splenopexy was done, putting an end to all further trouble from this source.

83. **Technic for Incising the Meatus of the Urethra.**—Ortiz gives an illustration of a grooved aluminum cone with ring handle. The cone is inserted in the urethra and the incision is made down into the triangular groove. Another device which he has found extremely useful is a ball-shaped tip to the cannula used in making the Janet injections into the urethra.

Russkiy Vrach, Petrograd

XIV, No. 20, pp. 457-480

87 Apparatus to Illustrate Blood Pressure. B. P. Babkin.
88 *The Suprarenals as Toxin Neutralizers. M. N. Cheboksaroff.
89 Filament Galvanometer. D. S. Voronzoff.
90 Aneurysms and Their Treatment. L. T. Sokoloff.
91 *Local Anesthesia with Quinin and Urea Hydrochlorid. (Chininum Bimuriaticum Carbamidatum.) V. S. Samborsky.
92 *Examination of Duodenal Contents and Its Clinical Value. A. M. Lichtendorff. Commenced in No. 16.

No. 21, pp. 481-504

93 *A Simple Method of Differentiation of Hemorrhagic from Purulent Hemorrhagic Effusion. N. N. Petroff.
94 Extraction of Foreign Bodies. A. T. Berdiaeff.
95 *Changes in Central Nervous System in Chlorosis. P. G. Zagorovsky.
96 Stab Wounds of the Neck. G. N. Maksimoff.

No. 22, pp. 505-528

97 *Desquamation of the Epithelium of the Urinary Tract as a Sign of the Exudative Diathesis in Children. A. N. Schkarin.
98 Bacteriology of Diseases Resembling Typhoid Accompanied by Rash. B. I. Klein, A. A. Krontovsky and A. M. Mariascheva.
99 Closure of Gunshot Perforation of Rectum with Flap from Its Mucous Membrane. N. V. Markoff.
100 Treatment of Fractured Jaw. V. Podtiagina.
101 Isolation of School-Children with Infectious Diseases. P. I. Korolkoff. Commenced in No. 21.

88. **Suprarenals Do not Annul Toxic Action.**—Cheboksaroff injected guinea-pigs with blood or serum from the suprarenals after mixing with diphtheria antitoxin. He came to the conclusion that epinephrin does not neutralize toxins, whatever the dose used.

91. **Quinin and Urea Hydrochlorid as Local Anesthetic.**—Samsborsky's experiments confirm the local anesthetic action of chininum bimuriaticum carbamidatum which he used in a 1 per cent. solution in 40 c.c. doses. With such doses he never observed any toxic effects, but the tissues became edematous at the place of the injection, and the surgical cut showed marked hyperemia. The anesthesia sets in ten or fifteen minutes after the injection and persists for several hours, while there is slight diminution of sensation for several days. This absence of postoperative pain makes the injections of this quinin preparation valuable, but the motor nerves should be avoided for fear of their possible paralysis. He used this drug in thirty-eight cases of various disorders. Only in three very old people the healing of the edges of the wounds was unduly protracted, and gangrene developed in one of them.

92. **The Duodenum Content.**—Lichtendorff studied the duodenal juice by means of Einhorn's duodenal tube and bucket. He used the tube dry, on an empty stomach. When the capsule or the bucket passes the pylorus, an indicator shows, which took place in five minutes, thirty minutes, or one and one-half hours after the tube was introduced. The color of the duodenal juice is light, sometimes brownish, and transparent. If it is turbid, this is due to admixture of acid stomach juice, or to admixture of white corpuscles. In icterus no bile was found in the duodenal juice, but all the three ferments of the pancreas, amylopsin, trypsin and steapsin were present. Repeated absence of bile testifies to complete obstruction of the common bile duct. There is normally no mucus in the duodenal juice, which is alkaline, sometimes neutral in reaction, or even acid from admixture of gastric juice. Blood when present indicates an ulcer. Microscopic examination shows the presence of pavement or cylindric epithelium, neutrophil leukocytes, eosinophils and some lymphocytes. He gives the histories and duodenal findings in thirteen cases. The clinical value of these examinations is evidently insignificant.

93. **Differentiation of Hemorrhagic Effusion.**—Petroff draws the suspected fluid from the pleural cavity or the joint into a test tube, adds four to six times the equal volume of distilled or plain water, shakes and waits two or three minutes. In case of hemorrhagic fluid the blood lakes to a red transparent solution. In the presence of pus, the solution is turbid and contains floating flakes or shreds. This hemolytic reaction should be inspected at once after the fluid is drawn, as even an hour of waiting renders the fluid in both instances transparent, with a sediment on the bottom.

95. **Changes in the Nervous System in Experimental Chlorosis.**—Zagorovsky produced in dogs artificial anemia by repeated blood letting and feeding them on food poor in iron, such as rice, potatoes and milk. The hematologic examinations invariably showed chloranemia when the dogs were killed by puncture of the fourth ventricle. The nerve cells of the anterior horns, fourth ventricle, cortex (pyramidal cells) and cerebellum (Purkinje) were studied with Nissl's method. This showed that chlorosis undoubtedly causes changes in them. These changes are in the form of chromatolysis, and changes in the shape and size of Nissl's granules, while the nucleus remains unchanged. The fibrils of the nerve cell become hypertrophied and break up in fragments, but the nonstaining substance shows comparatively little change. He gives illustrations of the various changes encountered at different points.

97. **Desquamation of Epithelium of Urinary Tract as Sign of Exudative Diathesis in Children.**—Schkarin determined the amount of cellular elements (epithelial cells, white cells) in the urine of children that suffer from constitutional disease or the exudative diathesis, and compared the findings with those in the constitutionally healthy and with a few cases of some inflammation of the urinary tract. In the group with the exudative diathesis, the urine invariably showed an increase of the cellular elements (cyturia), but this was still higher with urinary disease. The amount of cellular elements is not in proportion to the gravity of the process, and may be absent when the external signs, such as conjunctivitis, geographic tongue, prurigo, eczema, etc., are present and vice versa. On the other hand, desquamation of the epithelium may eventually be the sole sign of the exudative diathesis, which only later may develop other symptoms. The presence of white corpuscles indicates an inflammatory condition of the urinary tract. This is a frequent complication in constitutional diseases of children. The urine was centrifuged three times before the count was made.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

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102 Bacteriologic Diagnosis of Epidemic Cerebrospinal Meningitis. C. W. Broers and J. Smit.
103 Muscle Tone and Innervation. II: Rogowicz's Lip Phenomenon. (Pseudomotorische Zenuwwerkingen en tonusinnervatie.) G. van Rijnberk.
104 Precocious Sexual Characters in Boy Under 5; Hypopinealism? (Geval van Hypopinealisme?) J. T. Peters.

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105 Study of Sterilizing Power of Disinfectants in Proportion to Their Concentration. J. P. Gregersen.

Hygiea, Stockholm

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106 Present Status of Seroreaction in Pregnancy; Other Defensive Ferments. (Om utvecklingen och det nuvarande läget av frågan om de s. k. avvärjningsfermenten (Abderhalden) jämte undersökningar över graviditetsreaktionens specifitet.) F. Lindstedt.
107 Diffuse Dilatation of the Esophagus Combined with Asthma. H. Lindvall.